

15228. *Mr. Moore* [Q Your theory is not that the wire was blown off, but that something which was flying along at the time of the explosion cut it? A Yes. Several things were flying along the leading and some of them may have cut the wire.

15229. *Mr. Smith* [Q Have you got a sectional plan of the roadway outside of the 4th Right? A Yes.

15230. *Q* Did you not come earlier on that road, on the subway side? A Yes.

15231. *Q* Was any railroad kept up against them? A No, the railroad were washed away from the tracks.

15232. *Mr. Moore* [Q Is there not an accumulation of coal there? A Yes.

15233. *Q* And you have any hypothesis as to how that coal got there? A I searched for it over a large area, but I could find no evidence at all, except that I imagine that it came out of some hole.

15234. *Q* Have you any idea what became of the hole? A I have no idea.

15235. *Mr. Moore* [Q And you find any away hole? A No, except some between the 4th Left rope road and the travelling road. That place is 360 yards off, and there were, between those points, four full tons open.

15236. *Q* One conclusion which you arrive at is, from that part of No. 1 heading, opposite the 4th Right up to the 5th Right, everything was travelling edge, and all the signs of flame were away? A All the evidence I got between the 4th and 5th Right was that the force travelled edge.

15237. *Mr. Moore* [Q There was a dead point, I presume, and then from that dead point, going south, the force showed up as a line of travelling surface? A Yes.

15238. *Q* Where would you put the centre of that dead point? A Anywhere near the 4th Right. I have to assume something, I have to assume that some person I found some west of the 4th Right. I assume that because there is not person in the main road, and there is no one edge and edge of the 4th Right.

15239. *Mr. Moore* [Q That would show that the dead point would be just at the end of the 4th Right? A That is what I believe, provided the centre came out of the 4th Right, and was not on the main road.

15240. *Mr. Moore* [Q You have shown on the side of the 4th Right an accumulation of coal east, indicating a stop of wind round the corner like a wave? A Yes.

15241. *Mr. Moore* [Q There is a great mass of coal that has fallen just at the opening of the 4th Right. Did you notice the condition of that? About what was the thickness of it? A Well, the space that it left would show that it is a little over 2 feet. There is the section here which shows it, about 2 feet of stuff has fallen out.

15242. *Q* Was the place at the top black, or was it clean? A I do not remember.

15243. *Q* It appears there, where something has been removed, as though most of the stone was cut off from where it fell. Is it directly under the place it fell from? A Most of the stone appears to be cut off, there is one fairly large stone which is there.

15244. *Q* There is nothing to show at what exact stage of the proceedings the stone fell? A Nothing that I could see. I could only say that it was there.

15245. *Mr. Moore* [Q I suppose your notes back there nothing more than is shown on the plan? A Nothing more than is shown on the plan.

15246. I may say, your Honor, that these are all the witnesses that I intend to call. I intended to call the Managers, one of whom was with Mr. Atkinson at the scene, but I do not intend to do so. I should, however, like to ask Mr. Atkinson some questions as to circumstances. The Commission has accepted to me the right of putting him in the last again, if there is anything and by the Managers, which requires answering. I have also to deal with Mr. Atkinson's recollections finally where he has heard what the Managers have to say. The few questions which I have to ask him on recollections will serve my purpose then.

15247. *Mr. Moore* [And that he hoped that in the future the Commission would be able to proceed with a fairer more despatch than it had in this part.]

[The Commission at 3:12 p.m. adjourned until 11 o'clock on the following Monday.]

# APPENDIX, 16 FEBRUARY, 1912.

[The Commission met at the Land Appeal Court, Burlington.]

[Present:—

C. E. R. MURRAY, Esq., D.C.J. (PRESIDENT).

D. A. W. ROBERTSON, Esq., COMMISSIONER.

D. MITCHELL, Esq., COMMISSIONER.

Mr. Bruce Smith, Barrister-at-Law, instructed by Mr. Wood, Crown Solicitor's Office, appeared on behalf of the Crown.

Mr. A. A. Lought, Solicitor, appeared on behalf of—

(1) the representatives of deceased miners, widows, &c. (victims of the explosion);

(2) the employees of the Mount Kemble Colliery (miners, workmen, &c.); and

(3) the Elsworth Colliery Employees' Association (The Elsworth Miners' Union).

Mr. D. J. Barry, Solicitor, appeared on behalf of the Mount Kemble Coal and Ore Company (Proprietors of the Mount Kemble Mine).

(Mr. J. Gaskin, Secretary to the Commission, was present to take shorthand notes of the evidence and proceedings.)

Mr. A. A. ATKINSON, previously sworn, was further examined as under—

Re-examination by Mr. Bruce Smith:—

15248. *Q* First, I would like you to tell me about the hydrogen lamp—it was referred to as having been used in some of the mines, and not in others? A Yes.

15249. *Q* I want to ask you whether the hydrogen lamp is used for the purpose of official inspection in Great Britain? A No.

15250. *Q* Or in any other country that you know of? A No.



16214 Q What are they used for occasionally? A More particularly for ascertaining the percentage of gas which may be in the return airways of collieries.

16215 Q They are not provided for in any regulations as a necessary — A No.

16216 Q It has been suggested in some of the evidence that a hydrogen lamp might have been used at an earlier stage in the history of the Mount Kennedy Mine—suppose the hydrogen lamp had been used at Mount Kennedy before the accident, would it, in your opinion, have detected any accumulation of gas in the upper part of the post? A No, it would not be possible to get it close with any lamp.

16217 Q On the ground of the danger? A Yes.

16218 Q Now from gas, but from the fall? A From the possibility of falls.

16219 Q Suppose the hydrogen lamp had been used, and a small percentage of gas had been detected, what action could have been taken? A We could have closed off the Manager's attention to the percentage of gas found, and have pointed out to him the necessity of complying with Division Rules 5 and 12, with reference to the use of safety lamps, and with reference to blasting.

16220 Q Still these rules existed as a special provision for a Manager to see, quite irrespective of such suggestions? A Yes.

16221 Q Had you called the Manager's attention to those two rules, Nos. 5 and 12, before the accident? A Yes, after the inquiry expressed a circular was sent out giving the conclusions — [interrupted]

16222 Q Now — [interrupted]

16223 Q Now — [interrupted]

16224 Q After the Dudley accident, using the experience of that accident, you met out this matter? A Yes.

16225 Q Was a copy of that been put before the Commission? A No, I think not.

16226 Q Have you a copy here? A I have not, there are none in the Department.

16227 Q You might just tell me the purport of it? A It gives the conclusions of the Royal Commission on Coalfields, in order to draw the Manager's attention to that matter, and also to the necessity for complying with the provisions of Division Rules 5 and 12; and it also gives the general terms of the employment of that mine Order.

16228 Q That lot of permitted explosives? A Yes, at that time.

16229 Q You were asked (paragraph 16219), "Where a bag full is expected near a large area, what precautions should be taken to guard against possible danger from that fall?" You answered, "Do you mean, if gas is suspected?" There were a series of questions and answers, and you said, "If you were anticipating gas with a fall which might possibly raise a cloud of dust, I think that you should water the place, especially if you are using naked lights." Is there any other suggestion that you think should be made on an occasion of that sort? A If you were anticipating gas, you should abolish the use of naked lights and use safety lamps.

16230 Q Immediately? A Yes.

16231 Q You did not mention that? A No.

16232 Q You heard Mr. Lytton read some further suggestions from Newcastle? A Yes.

16233 Q Mr. Bruce Smith? I do not think any evidence has been given on those yet. I think I will reserve what Mr. Alderson has to say on those until evidence is given concerning them.

16234 Q That is all you desire to say in addition to your original examination? A Yes.

16235 Q With the exception of the comments that are proposed to be made on those twenty suggestions, and with regard to the new suggestions? A Yes, after we have heard the evidence.

16236 Q Mr. Bruce Smith? Of course, there is a great deal I could have gone into, going over the evidence again, but I think that, after all, it is Mr. Alderson's evidence against that of other people who have obtained him, and I will leave it.

16237 Q The House? Is there any wish to further examine Mr. Alderson?

16238 Q Mr. Lytton? No.

16239 Q Mr. Barry? No.

Examination by Mr. Robertson —

16240 Q Is an examination had been made at Mount Kennedy with a hydrogen lamp, and a very small percentage of gas found in any part, and you had suggested safety lamps to be used, do you think there would have been any objection stated by anyone? A I think there would, certainly.

16241 Q On the part of the management? A Yes, and the miners as well.

16242 Q On the ground of what? A Generally speaking, they prefer to use the naked light, as affording more light than the safety lamp.

16243 Q It is not more probable that the objection would be based on the ground that the quantity was so infinitesimal as to be scarcely worthy of consideration? A Yes, if you could not find it with the ordinary safety lamp, they would object on the ground of the very small percentage as well.

16244 Q So for there has been no technical definition of a penny mine, has there? A No, there has not. As I have, I believe, they divide mine into one or two classes, but, even there, the separate line classes is not sufficiently well defined by any certain percentage of gas.

16245 Q Not as dusty mines defined? A There is no definition, no.

16246 Q Now it is not desirable that mines which are very small be clearly defined by laying down some broad principle to govern such matters? A It is very desirable.

16247 Q What is your definition of a gassy mine? A I should say a mine which is giving off more or less constantly, keeping from the working place as much a quantity that it can frequently be detected by the ordinary safety lamp.

16248 Q Would it not be a safer principle to go on, if a gassy mine were defined as "a mine which is giving off explosive gas"? A I think your question was as to the definition of a very gassy mine.

16249 Q No, I said, "What is your definition of a gassy mine?" A Well, that would cover everything.

16250 Q Exactly. It would cover the definition of a very gassy mine, but, you say, we are far in from here with the fact that all the explosions which have occurred in this colony have taken place in mines that are only slightly gassy? A Yes.

16251 Q Is that not so? A Yes, I think that is correct.

16252 Q Then Kennedy—you could not describe that as a very gassy mine? A No.

16253 Q Nor Bala? A No.

16254 Q Nor Dudley? A No.

16255 Q Nor Newcastle? A No.

16256 Q Nor Sankton? A No.



FINCH—A. A. FINCH, 18 February 1933

14237. Q. And yet explosions have occurred with great loss of life at all these collieries! A. There have been explosions, both large and small, at all of these.

14238. Q. With loss of life? A. With some loss of life—Bulls and Kumbia very large explosions.

14239. Q. Where South? Q. You say there have been large and small explosions? A. Yes, large and small.

14240. Mr. Robinson? Q. Does not that point to the necessity for some legislation that would cope in every case where gas is given off? A. Yes, I think it would be well if that were defined, and if safety-lamps were used in all such cases.

14241. Q. For the purpose of defining what is a gassy mine, you would not consider the examination with the ordinary safety lamp sufficiently adequate—I am not referring to the examination by deposit—but, for the purpose of defining whether a particular mine was gassy or not gassy, would you be satisfied with the examination by an ordinary safety lamp? A. I think so.

14242. Q. Under those circumstances you could not define Kumbia as gassy? A. If we were to consider the evidence that has been given here, there have been many instances where gas has been given off without the use of the hydrogen lamp.

14243. Q. But, in considering this question, are we to take the evidence of irresponsible men, miners, or are we to take the evidence of scientists and experts themselves, such as yourself? A. I think you cannot disregard the evidence of the miners, if you believe what they say.

14244. Q. But, having had a report from a miner that he had met with gas in a mine, would you, to meet the necessity of that report, take an ordinary safety lamp or a hydrogen lamp? A. If you are sensible, after having the incident as reported by the miner, to find gas with the ordinary safety lamp, it is possible that an examination with the hydrogen lamp may show that a certain condition of gas is being given off.

14245. Q. Quite so, but the trouble of gas that can only be detected by a hydrogen lamp may accumulate and become in time so dangerous—it is only a question of time—as the condition that is detected by the ordinary safety lamp? A. That may happen, yes.

14246. Q. In the light of those dangers referred to, do not you think it is necessary to define a gassy mine as mine that is giving off explosive gas? A. Yes, I think that is a safe definition.

14247. Mr. Finch speak? Are you speaking with a view to future legislation? Of course it depends upon the light in which one is looking at this.

14248. Mr. Robinson? Yes.

14249. Q. It is not desirable that each mine, if they are defined as gassy mines, should be worked with safety lamps? A. Yes, I think so.

14250. Q. And do not you think that the type of lamps to be used should be subject to the approval of some authority? A. So long as they are acknowledged and approved type of lamp, I think that is sufficient.

14251. Q. That is what I mean. I do not mean to say that the authorities should necessarily require that a particular type of lamp should be used when another approved type is in the market; but what I want to prevent is the use of a lamp of an obsolete type? A. Yes, that may be necessary.

14252. Mr. Robinson? With the approval of what authority?

14253. Mr. Robinson? With the approval of some authority to be determined. Perhaps I should ask this.

14254. Q. You mean some official authority outside of the mine? A. Yes.

14255. Q. You are aware that a number of loss of mine have been caused by the use of the naked light—I am now referring to gassy mines? A. Quite so.

14256. Q. By naked lights coming into contact with combustible material? A. Yes, there have been a number.

14257. Q. And, as at least one instance, with fired timber, that is, the Greys Ene? A. Yes, that was in December, 1929.

14258. Q. Is it not desirable that the use of naked lights should be prohibited in mines not naturally wet and free from explosive gas? A. Disposed lights?

14259. Q. Yes, naked lights? Their use of dangerous, moreover, are they not, these lamps? A. Yes.

14260. Q. And there may lead to disastrous results? A. Yes.

14261. Mr. Finch speak? That is, not in a mine, you say, free from explosive gas?

14262. Mr. Robinson? Free from gas, and not wet and dry? A. Yes, it is actually wet and free from gas there is no danger in risk of a naked light.

14263. Q. A suggestion of that sort would have very far reaching effects. I do not think there are more than ten or a dozen mines in the State which you could call naturally wet throughout, and I am not prepared to altogether exclude the use of naked lights in all those mines.

14264. Q. In dry and dusty mines? A. Does the suggestion include the necessity for using safety lamps?

14265. Q. Yes, in dry and dusty mines where combustible materials are to be found? A. Which would certainly be necessary safety; but, as I say, it would have very far reaching effects. There might be some difficulty in defining, as drawing the line, as to which was a dry and dusty mine; that would be another difficulty.

14266. Q. These you do not see your way to suggest that? A. Not to go quite that length.

14267. Q. I take it that safety lamps are a great safeguard in very mine where gas is given off? A. Yes, they are.

14268. Q. Speaking on a rough sort of a way, would you put it at something like 50 per cent, if of course I do not say that you can exactly define a certain percentage of safety, but, in a rough sort of way, as a sort of rough indication, with safety lamps is a mine and the discipline what is ought to be, would that, in practice, mean 50 per cent of safety? A. Well, say 70 per cent, and a good deal might be done also in regard to a safer manner of working.

14269. Mr. Finch speak? You are suggesting that 70 per cent on safety lamps alone? A. Yes.

14270. Mr. Robinson? That has not been found in practice that, wherever safety lamps have been brought into use, better discipline is observed? A. That is the general result.

14271. Q. Better discipline? A. That is also another result.

14272. Q. Offsets mine when and intelligible? A. That is so, yes.

14273. Q. And the standard of safety and efficiency need promptly? A. Yes, that has generally been observed.



18904. Q In the ordinary sense I take it that you would not describe Joseph Kneble as a gassy mine—I am referring to the time prior to the explosion? A No, I could not, from what I know of it.
18905. Q Would it, in the ordinary acceptance of the term, be a dry and damp mine? Q Not throughout the mine, although parts of the haulage road might have been so described, I think.
18906. And what do you make its general reputation as, from the fully paid of view? A It has always been described as a safe mine.
18907. Q And did you suppose it to give off gas even in small quantities? A Well, I know that a mine had some, but I know that the damp was given off from the same areas in some of the neighbouring collieries, and I think it is probable that a small percentage was being given off.
18908. Q But I say generally, on in any particular parts, did you suspect it to give off gas generally throughout the mine? A Not generally throughout the mine.
18909. Q It is not that moving men may be perfectly aware of the dangers of coal-dust and fire-damp, but whether knowingly or not, or whether particular mine could be detected as a gassy or a dusty mine? A Yes, there would be a great variety of opinion if you were to take two or three and ask them to express an opinion on a matter of this kind.
18910. Q That is, although they were perfectly mixed with the importance of the coal-dust question? A Yes, there would be great variety of opinion.
18911. Q In the matter of using safety lamps—generally one view out of one hundred would consider it necessary to use safety lamps, even if individual quantities of gas were given off, but is it not a fact that 50 per cent. would not take that narrower view? A You refer to such a question as could not be seen by an ordinary safety lamp?
18912. Q Yes? A Yes, they would object to use safety lamps generally, if you could only find gas with the hydrogen lamp.
18913. Q And probably some of them would object, even if you could detect it with an ordinary safety lamp here and there? A Yes, that is my experience in this State. There has been great opposition to the use of safety lamps, even where fire-damp has been detectable with the ordinary safety lamp.
18914. Q It is not confined to this State only, but are there not mines in the British coal fields of that character, where gas can be detected with the ordinary safety lamp, but where they are still using the naked light? A Yes, there are some few, although the use of safety lamps is becoming more general.
18915. Q It is unfortunate that Managers do take that view? A Yes, it is.
18916. Q Still, we cannot discount the opinion of a large number of prominent mining men? A No.
18917. Mr. Bruce Smith? Q You are speaking I take it, of experts, quite apart from the fact that they are miners or Managers?
18918. Mr. Buchanan? Yes.
18919. Mr. Bruce Smith? People whose words are in no respectful condition?
18920. Mr. Buchanan? Yes.
18921. Q And, speaking of miners, as a matter of fact, the most strenuous opposition, generally speaking, to the introduction of safety lamps, has come from the miners? A Yes, that has been my experience; and on the part of the miners in some cases as well.
18922. Q Do you not think, from what has occurred at Kneble, and at those other slightly gassy mines in the State, that, unless more than the actual danger is anticipated, unless precautions are taken, to anticipate the potential danger of a mine area slightly gassy, disaster probably would stand even yet? A Yes.
18923. Q And I take it, even amongst the most advanced mining men, the Kneble accident has been an object lesson? A I think in many respects it has.
18924. Q And men who have hitherto not recognized the danger of naked lights in gassy mines and dusty mines, have now noticed it, though had not recognized it? A Yes, I think it has had that effect.
18925. Q There are many mines, I take it, in the British coal fields, and also in this State, of the same character as Kneble? A Yes.
18926. Q Of course we know the discipline and the arrangements generally, at such collieries would severely compare with an up-to-date gassy mine where safety lamps are used? A No. There is a general tendency for the discipline not to be so strict in collieries where naked lights are used as where safety lamps are used, and where there is consequently greater vigilance in all respects. That is the general result of my observation.
18927. Q But did the arrangements, generally speaking, compare favourably at Kneble or otherwise with other parts of the same character? A They were just about on a par, I should say.
18928. Q Can you give a single instance of an explosion in a mine about in the same manner as you yourself suggest this has been brought about at Kneble? A No, I do not know of a similar case. The nearest parallel, I think, would be an explosion at the Hyde Colliery, where the roof, weighting, caused some fire-damp to be liberated, but, instead of being an accident, it was a warning, and the houses and the gas with its naked light.
18929. Q And because with a naked light? A Yes.
18930. Q And that is an example of bad discipline, an accident caused by a fireman or deputy's naked light? A Yes, although they had not even put in that mine for some considerable time.
18931. Q But still, if the deputy had not been using a safety lamp, the explosion would not have occurred? Q No.
18932. Q Can you imagine a chain or sequence of more minute contingencies than the accumulation of gas in a district believed to be free from gas, that gas being forced out into a mine at the top, although surrounded by a return airway, and being forced out with such force as to cause a cloud of dust, which, being mixed with gas, creates in a naked light on a mine, but by the dust, which, in fact, is gas, would not, except under extreme fiery, violent means, ever be found in the vicinity of a safety lamp? A With the combination of circumstances appears to be, as far as I know, made up of coal and moisture, weight.
18933. Q Could it have reasonably been foreseen? A I do not think so.
18934. Q Can you trace any connection between the origin in a really examination of the old waste at Kneble, and the disaster? A No, from the evidence I have heard as to the condition of the old light I cannot see any connection.
18935. Q Do you know anything of an accident which occurred at the Broken Hill South Mine? A I do. I have read the particulars.



Witness—A. A. Adkins, 16 February, 1901

- 14156 Q Have you them fresh in your mind now? A Yes, generally speaking; although, perhaps, some of the details may require looking up.
- 14157 Q Was it a large fall from a very great height? A Yes, it was a fall of some of the stapes, I think, from a height of 30 or 40 feet.
- 14158 Q Descending the air from a very small surface? A Principally through one roadway 7 or 8 feet across.
- 14159 Q It caused loss of life? A So no more lives were lost, I think.
- 14160 Q Do you know whether it caused any flames or raised the temperature in any way? Q Well, I have information from Mr. Shilbroad, who was the inspector, and also from Mr. Mayes, who was the Manager, that there was no burning or burning of any of the men.
- 14161 Q They were killed in the street? A By the flames.
- 14162 Q Of the air? A Yes.
- 14163 Q My friend Smith, Q The medical evidence in that case does not show any fire or any smothering or burning, does it? A No.
- 14164 Q You have the depositions, if the Commission wish to see them? A Yes.
- 14165 Mr. Robinson, I think we might have done.
- 14166 Mr. Adams, I Yes.
- 14167 Witness, I also have a letter from Mr. Richardson and one from Mr. Mayes, if the Commission desire to have them.
- 14168 Mr. Robinson, Yes, I would like to read them.
- 14169 Q If safety lamps had been used at Kenville, do you think this disaster would have occurred? A If they had been used there, as they are being used now—that is, practically from the tunnel mouth—I think it would not have occurred.
- 14170 Q Assuming that the mine had no knowledge of gas in the mine—I am not saying that they had—assuming that they had not, you had no knowledge, had you? A No.
- 14171 Q The miners say they know of it? A Yes.
- 14172 Q Do you think that their failure to report complaints to yourself, or the District Inspector, was primarily responsible for the disaster? A I should not like to go as far as that.
- 14173 Q But I think you will in your evidence that, if you had known away that gas was being given off in Kenville, you probably would have taken such steps as might have averted this disaster? A Yes, that is my opinion.
- 14174 Q And if any man feels a danger or a defect in a mine, and wishes to report it, is not he responsible for anything that may come through that defect? A Yes, he is only to report to the officials.
- 14175 Q Is he not morally responsible?
- 14176 Mr. Adams Smith, Mr. Robinson, I think, in asking you about moral responsibility, and you are answering about the responsibility under the law.
- 14177 Mr. Robinson, Q Put it that way, actually or morally? A I am afraid I can not so report in all these cases.
- 14178 Mr. Adams Smith, I do not think Mr. Robinson considers himself as expert in morality.
- 14179 Mr. Adams, Mr. Robinson does not pose as an expert in morality.
- 14180 Witness, I think not.
- 14181 Mr. Robinson, I certainly think that a person, who knows of a danger or defect—it does not matter how you describe it—if he is not actually responsible, is morally responsible morally.
- 14182 Witness, I Whether to be official or moral?
- 14183 Mr. Adams Smith, I I raise the question as to how far serious people realize the danger of certain conditions. If they do not realize the danger, it is a question how far they are responsible.
- 14184 Mr. Robinson, Q It has been alleged that miners are slow to report? A Yes.
- 14185 Q Do you think, speaking from your own knowledge—you have been a Manager yourself—there is any warrant, generally speaking, for such an assertion? A I think there may be some little in it, but I think the miners exaggerate the possible consequences very much. I think it is a very unfortunate feature.
- 14186 Q But do you not think most Mining Managers would rather welcome reports from the miners, or anybody else to defects? The Managers cannot be as every part of the mine, and most, necessarily, rely upon reports; and, therefore, every additional inspector that can bring information to the Manager is of advantage? A Yes, they should rather seek to have complaints than to suppress the knowledge of any possible danger.
- 14187 Q Of course you have read Mr. Hall's report on the matter of watering roadways? A I have.
- 14188 Q And its failure in his district? A Yes.
- 14189 Q Do you consider the explosion at Fernie, in Canada? A During last year?
- 14190 Q Last year, I think it was? A Yes.
- 14191 Q This is a report, which I am going to read part of, by Mr. Hinkinson? A I have read the report.
- 14192 Q Mr. Hinkinson wrote: "At the Fernie Mine there were considerable areas where water was lying on dripping, and yet these wet areas had no effect upon the spread of the explosion, which passed over as though there was apparently the same case as would have been the case if they had been dry." In view of that, and Mr. Hall's evidence, and also the experience at Kenville, where the explosion jumped long lengths of sleep or wet roads, do you still rely upon short sections of wet roads to arrest an explosion? A I think that the information is required to enter the Fernie Colliery, does not describe it as a length of properly wetted road. It says there is wet. I naturally know of several cases where properly wetted lengths of road, or such which, over a certain length, have been suitably wet, have stopped explosions.
- 14193 Q This is what Mr. Hinkinson says: "At the Fernie Mine there were considerable areas where water was lying on dripping." A He does not give us the length.
- 14194 Q He says "considerable areas"—does not that point to the conclusion that, if watering is to be effective it must be thorough, and must not stop short at 150, or 200, or 300 yards, and it must not be confined to water on surface from the district, but to every outlet? A Yes, the evidence does certainly point in that direction.
- 14195 Q So the mine is absolutely useless in watering unless it is done thoroughly over long distances? Q I am not inclined as to that result.



14396 Q I am asking you from the light of experience. There is what Mr. Hall says, and what Mr. Alderson says, and what we have a number discussed at Kewfield? A Yes. On the other hand I could show you quite as many instances, and quite as many witnesses, who hold opposite opinions. It is not a matter which has been decided. There is still great variance on the subject.

14397 Q But I think it does generally point to the necessity for watering, if it is to be done at all, to be done on a large scale? A Yes, that would be better and that would exclude the necessity for separate wet lengths of the whole thing were watered.

14398 Q Assuming that the roads are watered, do not you think, in a very dusty area, the dust in suspension is the one—that is the dust caused by the wheels in shuffling into the slips, would be sufficient to carry an explosion through a mine? A No doubt it would have that effect along the face, especially in a long wet face.

14399 Q As a matter of fact, I take it, the actual amount of dust required to carry an explosion along is really insignificant? A Yes, it is really very small; in fact, one has had as an instance saying that sufficient dust to blow a whole bench of rock, just by lifting it up, is sufficient to carry it. Perhaps that may be an exaggerated opinion, but some authorities go so far.

14400 Q But have you not observed dust raised in a mine suspended in the air, sufficient to carry on an explosion? I am not speaking of what is considered on the benches and on the floor? A Yes, I think, particularly near the bottom of the downcast shaft, where a lot of dust is coming down from the surface, there might be a sufficient quantity floating in the air.

14401 Q Mr. Alderson? Mr. Alderson, it is not possible that, although a length of wet road may not prevent an explosion passing over it, it will prevent that length of road from being the source of sufficient coal-dust explosion to run on to the first?

14402 Mr. Alderson? Yes.

14403 Mr. Alderson? It travels from one place on to mine an explosion to another, but, although it may jump over a wet section, the fact of that section being wet, prevents dust being raised from that section to start the explosion.

14404 Mr. Alderson? But if it jumps over a wet section, it may pick up dust on the other side to start it.

14405 Q Now, I think you said that watering was absolutely harmful to the rock and floor, and where? A In some cases, yes.

14406 Q And, in mines with a very high temperature, it would be destructive to the timber? A Yes, I think, also have a tendency in that direction, no doubt.

14407 Q And it would be a very serious matter, would it not, to waste a large mine systematically? A You mean a nearby mine?

14408 Q Yes? A Yes, it would.

14409 Q Both in the first case, and in maintenance afterwards? A Yes.

14410 Q It is really possible, I mean conversely possible? A Yes, when you, I think, in a colliery where it is necessary to wet or maintain travelling roads, faces, all workings and returns?

14411 Q Yes? A Much a case in that, I think, that it would be, possibly, conversely impossible.

14412 Q To be always practical one it must be through? A Yes, but I do not think there are many mines in this area where it would be necessary to water the returns, simply with the timber, in order to secure safety.

14413 Q In my experience, speaking of one mine that I am connected with, I find the returns are the danger. A Yes, returning to the temperature, of course I know that it is dusty in returns, and working places, and in places, and all over the place.

14414 Q You have estimated, I think, the quantity of water for damping? I think you said it was a 1 of a gallon in the square yard? A That was in a paper, "The Safety Manager."

14415 Q That means to about 5,000 gallons per mile? A Yes.

14416 Q And if you have 40 miles is a 200,000 gallons? A Yes.

14417 Q That would not be possible at any mine in this State? A Not to do the watering sufficiently often to be of any value.

14418 Q General Hall, 12 provides, I think, for water watering in the vicinity of a shot in permitted explosives? Yes.

14419 Q Well, when the circumstances were such that watering was impracticable, by reason of the scarcity of water, or the cost, would it not occur the more if shots were permitted in the house at night, if permitted explosives were used, and fired by electricity under supervision? A I think, even with the permitted explosives, they should observe the same precaution as to watering as with blasting powder.

14420 Q No doubt, if practicable? A It is not practicable. I think the safety explosives should not be used.

14421 Q But, under General Rule 12, you are permitted explosives to without watering? A Yes.

14422 Q What is your opinion as to the use of gascocks in such cases should be? A I think, even with the permitted explosives, they should observe the same precaution as to watering as with blasting powder.

14423 Q Prohibited altogether? A Prohibited.

14424 Q And that being restricted to responsible officials? A Yes.

14425 Q What is your opinion as to the method of hanging shots? A Very kind with a face? A I am agreed to what?

14426 Q With special reference to hanging shots in a long? A Yes, you have got it. A Well, are you supposing that they are using gascocks with the shot?

14427 Q No, I am supposing that it is necessary to use permitted explosives? A I think that the shot worked into the face with no electric battery in such a case.

14428 Q And you do not approve of doing with a face? A With permitted explosives.

14429 Q Yes? A No.

14430 Q I think most people agree that the philosophy of General Rule 12 is obscure and complicated? A Yes, it is.

14431 Q I think that no mining man has yet admitted that he could interpret General Rule 12 without sitting down and thinking very hard? A No.

14432 Q Do not you think that rule should be reworded? A Yes, I think it would be much better if it were made much simpler.



Witness—A. A. Johnson, 15 February, 1939

- 16419 Q Do such a firm that an ordinary man with ordinary education could clearly understand? A Yes, I think that is very desirable.
- 16420 Q And that is quite possible? A I think so.
- 16421 Q It is a point? Because people would not the framing of such a rule be very much easier if you prohibited paragraphs in certain cases? A Yes, I think it would.
- 16422 Q Would you favor the appointment of a board representing the different interests, to whom questions of the expediency of the new Standard Rule, or any amendments of opinion, between the Inspector and the Managers, might be referred? A Yes, I think such a board might do very useful work.
- 16423 Q We have heard a great deal from the miners as to the necessity for cut-throughs being more frequent? A Yes, I think so.
- 16424 Q Do you think that such a suggestion would be fatal to the rule making and to the recorded working of mines at once that ministerial objection? A Yes, I think it would be in the case of deep mines.
- 16425 Q Are not all such suggestions upon a manager's discretion as to the best method of working payed off? A I think it is unnecessary to indicate the manner in which a man shall be worked, even to the extent of cut-throughs.
- 16426 Q Mining is essentially an industry where efficiency and safety depend upon the intelligence the management shows in adapting methods to conditions? A Yes, the conditions are so varied that it is almost impossible to lay down any general lines.
- 16427 Q And it is not desirable for legislation, leaving opened great responsibilities upon the manager, to limit his discretion as to what particular method of working he will adopt for a particular case? A I think it is unnecessary.
- 16428 Q Then, to my objection that may be raised that a manager is carrying on a system of work which is random, the remedy would be to have the matter referred, on the complaint of the Inspector, to a committee, or to the permanent board that I have suggested.
- 16429 Q Respecting farmers, would you favor the following provision: "That, with the exception of existing mines, where a farm is in use capable of supplying sufficient coal for the requirements of the Act, the ventilation of all mines where the number of persons employed exceeds thirty shall be regulated by law, provided that when, in the opinion of the directors, the quantity of mineral to be gotten will not warrant the expense, or where, from any cause the ventilation of them would be difficult or impossible, the Minister may grant an exemption on, holding that, that the matter be referred to arbitration? A Yes, I think that contains part of the suggestion which I mentioned.
- 16430 Q That is to say, it prohibits farmers being used unless under special conditions approved by the Minister? A Yes, I think a rule to that effect would answer all purposes.
- 16431 Q And it prevents the continuance of the use of farmers at mines where farmers are already in use, and capable of supplying sufficient quantities? A Yes, it seems to me a reasonable suggestion.
- 16432 Q Those where farmers are in use, do you not think that they should be so constructed and surrounded by protecting walls and the passages as to prevent the ignition of the stonies or stonies? A Yes.
- 16433 Q There have been accidents? A, By farmers, yes.
- 16434 Q Without more protection? A Yes.
- 16435 Q And, where a farmer is in use, do you think it is that should be lined with brick? A Yes, I think the stonies in such a case should be lined with brick in this State.
- 16436 Q And, where a farmer is used, a separate outfit for the use should be provided? A In addition to the ordinary descent shaft?
- 16437 Q Yes, unless it is a case of a mine—I do not know whether there are any—where the upcast is also the descent shaft? A There are cases where the upcast has a farmer, and has a second outfit.
- 16438 Q In any cases hereabouts would you permit the farmer shaft to be used as an outlet for the mine? A I think regulations for the future might prohibit it, but it must be that there are some existing conditions which will have to be considered.
- 16439 Q Quite so, I recognize the difficulty with existing mines. Speaking about shafts, I think you make the remark that the stonies in this State were rather touchy? A Yes, generally speaking I think they are.
- 16440 Q They are affected by the atmosphere? A By the weather.
- 16441 Q In a way that we, with liberal experience, are rather surprised at? A Yes; it seems that the stonies find a good deal.
- 16442 Q Any would you think it necessary to say shafts that are sunk after the date, when persons have to descend or descend, to have them lined with either brick or timber? A Yes, I agree with that suggestion.
- 16443 Q Something has been said or recommended as to smoke instruments being suspended in the shaft—was it not a fact that the indications of the barometer are of no practical value? A No, the movements of the gas are so much quicker than the movements of the mercury that the gas may have come and gone before the mercury begins to be moved.
- 16444 Q Does that take place before the indications are recorded? A Yes.
- 16445 Q And, with the exception of the water gauge, I take it that no importance at all is attached by the best men to barometrical or thermometrical readings? A That is the general opinion.
- 16446 Q I take it that the confidence of the men is engendered by the variations of the barometer there is not a sufficient margin of safety? A No.
- 16447 Q And the conclusion should be collected to vent all possible conditions, under a variation in the atmospheric pressure? A Yes, it should.
- 16448 Q General Rule 8 says: "Wherever safety lamps are used, they shall be so constructed that they may be safely used against the air currents sufficiently prevailing in that part of the mine in which the lamps are for the time being in use, even though such currents should be variable." As a matter of fact, it is impossible to find a lamp fulfilling those conditions? [It would not answer.]
- 16449 Q Do you know of any safety lamp capable of being safely used against an explosive current in any locality? A Not at any locality, but in the situation and safety prevailing in the mine. Of course, sometimes, in exceptional cases, you get very high velocities—oil fire, a second.
- 16450 Q A good deal more? A In what case a safety lamp would probably fail, but those conditions are very exceptional.



16465. Q. Would it not be better to have this side or framed than an exposed type of seating-pipe could be used; because, in practice, that is what is common? A. Yes, that is the general rule.

16466. Q. There seems to be no evidence that gas had accumulated in the No. 1 back leading-pipe to the explosion? A. No, I think not.

16467. Q. As far as you know the location was in perfect condition? A. The location was in the back leading after the explosion; I saw it, and I have no reason to think that it was set up in the usual way.

16468. Q. As a matter of fact, very little of it was damaged after the explosion? A. No, not much of it.

16469. Q. That being so—you see that the usual place the fresh air passed through? A. Yes.

16470. Q. Do you think it is reasonable to assume that gas existed at that point? A. I think that, as gas was afterwards found there, there might be a small percentage, undetectable even with the safety lamp.

16471. Q. I am quite prepared to agree with you there; but it is not probable that gas could have been found in that place months of being detected by the safety lamp? A. No, I do not think I have suggested that.

16472. Q. But you suggest that, when the explosion reached that point it received further fuel, as it were, and fresh energy, from the gas which you suppose had accumulated there? A. I do not think I said the word "accumulated"; I said, I think, a small percentage of gas in the air.

16473. Q. I gathered from your remarks that you had assumed more gas to be there at a percentage capable of being detected with the ordinary lamp? A. I do not think I have suggested that.

16474. Q. Part of the explosion passed on to the left, and part passed down the back leading? A. Yes.

16475. Q. How is that consistent with the determination of Haines' tests and Marcell's chart and curves having been blown up, in the direction which you say the explosion came out from? A. Yes—well, I could not attempt to account for the portion of everything you can see after an explosion, and I can only suggest that these things were carried there by the air when it was moving in an explosion—"back back," as it is sometimes called.

16476. Q. At all events they were inconsistent with the theory of the explosion having come down hill? A. I do not think so.

16477. Q. In your evidence there is a quotation from Johnson's work, page 285 of the cause—

The striking of the dust is an indication after some 6 or 7 long bars, whose point from each stage have passed. This point started at the working face than at the leading road. It was not observed at the shaft head of an explosion. A detailed and substantiated examination of dust on its stage leads to the theory of early, sufficient reason for moving the question of time.

You had some samples taken at dust along the No. 1 main haulage road? A. Yes.

16478. Q. And they were microscopically examined? A. Yes.

16479. Q. And given no indication of riding? A. It is sometimes difficult for anyone to say exactly when the riding process commences, and an accurate measuring and dust microscopically is very often desired.

16480. Q. But the examination was made by Mr. Haines? A. By Mr. Haines.

16481. Q. But he is not an expert? A. Oh no, I do not suggest that. I do not suggest it is his case.

16482. Q. I think that the reason of his report was that the dust was quite unchanged? A. No, I did not gather that at all, in fact he said that he thought that it had been subject to flame. Mr. Haines is prepared to give evidence, if the Commission desire it.

16483. Q. Did not you refer to it in your evidence at the report—the samples were taken before the impact? A. They were. I might have a side some reference in my evidence to it—I forgot just now. [Pleading a note of General's report.] At the bottom of page 26 I referred to some dust collected at the bottom of the 4th Left pipe road as follows:—I took a sample of that dust, and had it examined microscopically, to see if it had been riding. The Mineralogist of the Maine Department reported to me that there were signs of riding.

16484. Q. Have you read that report from Mr. Haines? A. Yes.

16485. Q. You know that sample was taken by the Commission of the dust that was found plastered on the side of the pipe in the back leading? A. Right. Was that Haines? A. Yes, so I understood.

16486. Q. You will observe that the minute hydrocarbon, as to all interests and purposes, precisely the same as the supposed solid dust as in the original dust? A. Yes.

16487. Q. It that is so, and some of the soluble constituents of the dust have been dissolved, all how do you reconcile that with a solid explosion? A. I must say that I was surprised to see that some of the soluble hydrocarbons had been dissolved.

16488. Q. It is absolutely certain, if that sample represents the dust throughout the mine, and if part of the volatile matter has been driven off that there has been no dust explosion—you could not have a dust explosion without changing the chemical constituents of the solid dust? A. I think there has been some dust explosion in spite of Mr. Haines's analysis.

16489. Q. Yes, that is a reasonable assumption, but how is it to be reconciled with the analysis of the supposed solid dust? A. I cannot think of it.

16490. Q. It is quite clear that the dust which we supposed to be solid is simply agglomerated, stuck together in a partly aqueous, probably caused to be impervious material to form at into a solid mass, but not to equal the volatile hydrocarbons? A. I should have thought that but sufficient to have the matter would have been sufficient to equal some hydrocarbon from the coal.

16491. Q. Well, we have Mr. Haines's analysis? A. Quite so. It is a difficult matter which I cannot explain.

16492. Mr. Wheeler. Q. Have you gone as much for the chemistry of the matter, Mr. Johnson, as only for the general microscopy and management of mine, as you are expert in chemistry? A. No.

16493. Mr. Johnson. Q. Still it does not require any great knowledge of chemistry to see the 1,000,000 have a dust explosion without changing the chemical composition of the dust? A. No, I suppose not.

16494. Mr. Wheeler. Yes, but there might be a question whether the heat portion of that might not be completely transformed, in fact, while the larger portion of dust was only partially oxidized.

16495. Mr. Johnson. Yes, come, Your Honor, that the solid carbon in the very fine particles of dust might have been actually consumed.

16496. Mr. Wheeler. Yes, there is a very fine state of division, while the larger particles might show partial signs of melting, but not have their volatile hydrocarbon driven off, or the larger portion of them.

16497. Mr. Johnson. It is across evidence, Mr. Johnson, that is a coal dust explosion, no matter what quality of dust may be present, only a very small proportion actually plays a part in the explosion? A. Yes, I think that has been shown.



Memorandum, A. J. Johnson, 10 February, 1930

- 16133 Q Is such a form that an ordinary man with ordinary education could easily understand? A Yes, I think that is very desirable.
- 16134 Q And that is quite suitable? A I think so.
- 16135 Q It is a pretty clean page. Would not the framing of such a rule be very much easier if you prohibited preponderant previous cases? A Yes, I think it would.
- 16136 Q Would you stress the appointment of a board representing the different interests, in whose question of the experience of the new-laid rules or any determinations of opinion between the Inspector and the Managers, might be referred? A Yes, I think such a board might do very useful work.
- 16137 Q We have heard a great deal from the miners as to the necessity for not through being more frequent? A Yes, I have.
- 16138 Q Do you think that such a supervisory board is fatal to the safe working and to the economical working of mines at some time without delay? A Yes, I think it would be in the case of deep mines.
- 16139 Q Are not all such restrictions upon a manager's discretion as to the best method of working prohibited? A I think it is unnecessary to indicate the manner in which a mine shall be worked, even to the extent of not through.
- 16140 Q Mining is essentially an industry where efficiency and success depend upon the intelligence the managerial class in selecting methods to conditions? A Yes, the conditions are so varied that it is almost impossible to lay down any general laws.
- 16141 Q And it is not desirable for legislation, having imposed great responsibilities upon the manager, to limit his discretion as to what particular method of working he will adopt for a particular end? A I think it is unnecessary.
- 16142 Q Then, as to any suggestion that may be made that a manager is carrying on a system of working which is unsafe, the remedy would be to have the matter referred, on the complaint of the Inspector, to arbitration, or to the permanent board that I have suggested.
- 16143 Q Regarding farmers, would you leave the following provision—"That, with the exception of mining areas where a farmer is or is capable of supplying sufficient air to meet the requirements of the Act, the ventilation of all collieries where the number of persons employed exceeds thirty shall be provided for him provided that when, in the opinion of the miners, the quantity of mineral to be gotten will not warrant the expense, or when, from any cause, the creation of such a rule would be difficult or impracticable, the Manager may grant an exemption, or, failing that, that the matter be referred to arbitration? A Yes, I think that contains part of the suggestion which I mentioned.
- 16144 Q That is to say it prohibits farmers being used unless under special conditions approved by the Minister? A Yes, I think a rule to that effect would cover all purposes.
- 16145 Q And it permits the continuance of the use of farmers in mines where farmers are already in use and capable of supplying sufficient ventilation? A Yes, it seems to be a reasonable suggestion.
- 16146 Q Then, where farmers are in use do you not think that they should be so constructed and surrounded by protecting walls and air passages as to prevent the spread of the stream of air? A Yes.
- 16147 Q Does that have passed? A By farmers, yes.
- 16148 Q Without more provision? A Yes.
- 16149 Q And, where a farmer is in use, do you think the shaft should be lined with brick? A Yes, I think the shaft in work that should be lined with brick in this State.
- 16150 Q And, where a farmer is used, a separate shaft for coal should be provided? A In addition to the ordinary descent shaft?
- 16151 Q Yes, unless in a case of a mine—I do not know whether there are any—where the upcast is also the normal shaft? A There are cases where the upcast has a farmer, and has a normal shaft.
- 16152 Q Is any mine in which you permit the farmer shaft to be used, so an outlet for the air? A I think regulations for the future might prohibit it, but it would be that there are some existing conditions which will have to be considered.
- 16153 Q Quite so, I recognize the difficulty with existing mines. Speaking about shafts, I think you made the remark that the shafts in this State were either timbered? A Yes, generally speaking I think they are.
- 16154 Q They are affected by the atmosphere? A By the weather.
- 16155 Q In a way that we, with British experience, are rather surprised at? A Yes, in some cases the shafts get a good deal.
- 16156 Q And would you think it necessary in any shafts that are made after this date, where persons have to ascend or descend, to have them lined with either brick or timber? A Yes, I agree with that suggestion.
- 16157 Q So nothing has been said or recommended as to scientific instruments being required at the shaft—was it not a bit that the indications of the barometer are of no practical value? A No, the measurements of the gas are so much quicker than the measurements of the mercury that the gas may have risen and gone before the mercury has time to be moved.
- 16158 Q Does that take place before the indications are recorded? A Yes.
- 16159 Q And, with the exception of the water gauge, I take it that no instrument at all is attached by the last time to have worked in the uncorrected reading? A That is the general opinion.
- 16160 Q I take it that if the ventilation of the mine is regulated by the variations of the barometer there is not a sufficient margin of safety? A No.
- 16161 Q And the result is that it is sufficient to meet all possible conditions, such as a variation in the atmosphere pressure? A Yes, it should.
- 16162 Q General Rule 5 says—Wherever safety lamps are used, they shall be so constructed that they may be safely raised against the air current without seriously injuring in that part of the mine in which the lamps are for the time being in use, even though such current should be reversed? A As a matter of fact, it is impossible to find a lamp holding these conditions? [Efficient did not answer.]
- 16163 Q So you know of any safety lamp capable of being safely carried against an explosive current at any velocity? A Not at any velocity, but at the velocities, seriously prevailing in the mine. Of course, sometimes, in exceptional cases, you get very high velocities—50 feet a second.
- 16164 Q A good deal more? A In which case a safety lamp would probably fail, but those conditions are very exceptional.



16442. Q Would it not be better to have this idea as stated that an approved type of safety lamp could be used, instead of a gas lamp, that is when it comes to it? A Yes, that is the general remark.
16443. Q There seems to be no evidence that gas had accumulated in the No. 1 tank leading prior to the explosion? A No, I think not.
16447. Q As far as you know the location was in perfect condition? A The location was in the tank leading after the explosion, I saw it, and I have no reason to think that it was not up to the usual size.
16448. Q As a matter of fact, very little of it was damaged after the explosion? A No, not much of it.
16449. Q That being so—was not that the second place the tank air passed through? A Yes.
16470. Q Do you think it is reasonable to assume that gas existed at that point? A I think that, as gas was afterwards found there, there might be a small percentage undetectable even with the safety lamp.
16471. Q I am quite prepared to agree with you there, but it is not probable that gas could have been found in that place capable of being detected by the safety lamp? A No, I do not think I have suggested that.
16472. Q But you suggest that, when the explosion reached that point, it reached farther back, so to speak, and took energy from the gas which you suggested had accumulated there? A I do not think I used the word "accumulated". I think I said a small percentage of gas in the air.
16473. Q I gathered from your remarks that you had assumed more gas to be there of a percentage capable of being detected with the safety lamp? A I do not think I have suggested that.
16474. Q Part of the explosion passed on to the left and past passed down the tank leading? A Yes.
16475. Q How is that consistent with the circumstance of Moore's bottle and Moore's shirt and Moore having been blown up in the direction which you say the explosion came on from? A Yes—well, I could not attempt to account for the position of everything you can see after an explosion, and I can only suggest that those things were moved there by the air when it was recovering its equilibrium—"back blow," as it is sometimes called.
16476. Q At all events they seem considerable with the theory of the explosion having come down hill? A I do not think so.
16477. Q Do you recollect there is a question from Adams's work, page 286 of the notes,—

The rising of the dust is an indication after starting very long before when great force had been imparted. The more violent of the whirling there than on the tank leading. It was not observed at the start, but it is an explosion. A chemical and mechanical examination of dust on bridge made in the course of working, which shows for starting the passage of dust.

You had some samples taken of dust along the No. 1 main heading? A Yes.

16478. Q And they were microscopically examined? A Yes.

16479. Q And gave no indication of coloring? A It is sometimes difficult for anyone to say exactly when the mixing process commences, and an instance involving coal dust is consequently a very often doubted.

16480. Q But the examination was made by Mr. Hazlett? A By Mr. Morgan.

16481. Q But he is not an expert? A Oh no, I do not suggest that. I did not suggest it is his name.

16482. Q I understood the sense of his report was that dust was quite unchanged? A No, it did not matter that at all, or that he was that he thought that it had been subject to some. Mr. Morgan is prepared to give evidence, if the Commission desire it.

16483. Q Did not you refer to it in your evidence at the inquest, the samples were taken before the report? A They were. I might have made some reference in my evidence to it. I forget just now. [Referring to notes of Currier's report.] At the bottom of page 56 I referred to some dust collected at the bottom of the No. 1 left ore road as follows:—I took a sample of that dust, and had it examined microscopically, to see if it had been altered. The Mining Report of the Motor Department reported to me that there was no change of coloring.

16484. Q Have you read this report from Mr. Hazlett? A Yes.

16485. Q You know that sample was taken by the La Crosse of the dust that was found plastered on the side of the iron in the tank leading (No. 1 High Main Tank Heading)? A Yes, so I understood.

16486. Q You will observe that the volatile hydrocarbons are, in all instances and passages, primarily the same in the supposed cause dust as in the original dust? A Yes.

16487. Q If that is so, and some of the volatile constituents of the dust have been driven off, how do you reconcile that with a dust explosion? A I must say that I was surprised to see that some of the volatile hydrocarbons had been driven off.

16488. Q It is absolutely certain, if that sample represents the dust that effected the explosion, and if some of the volatile matter has been driven off that there has been a dust explosion. You could not have a dust explosion without changing the chemical constituents of the dust? A I think there has been a dust explosion in spite of Mr. Hazlett's analysis.

16489. Q Yes, that is a reasonable assumption, but how is it to be reconciled with the analysis of the supposed cause dust? A I cannot reconcile it.

16490. Q It is quite clear that the dust which was supposed to be cause is simply unaltered, stuck together in a pretty mass, probably caused by a temperature sufficient to form it into a pretty mass, but not to expel the volatile hydrocarbons? A I should have thought that had sufficient to burn the masses could have been sufficient to expel some hydrocarbons from the coal.

16491. Q Well, we have Mr. Hazlett's analysis? A Quite so. It is a difficult matter which I cannot explain.

16492. [The Doctor.] Q Have you any reason for the chemistry of the matter, Mr. Adams, is only for the general chemistry and composition of matter given in an organic chemistry? A No.

16493. [Mr. Robinson.] Q That it does not require any great knowledge of chemistry to see that you cannot have a dust explosion without changing the chemical composition of the dust? A No, I suppose not.

16494. [The Doctor.] Q Yes, but there might be a question whether the large particles of dust might not be completely unaltered, in fact, whilst the larger particles of dust were only partially altered.

16495. [Mr. Robinson.] Q You mean, that the solid carbon in the very inner particles of dust might have been actually consumed?

16496. [The Doctor.] Q Yes, those in a very fine state of division, whilst the larger particles might show partial signs of charring, but not have their volatile hydrocarbons driven off, as the larger portion of them.

16497. [Mr. Robinson.] Q It seems evident, Mr. Adams, that in a coal dust explosion, no matter what quantity of dust may be present, only a very small proportion actually plays a part in the explosion?

A Yes, I think that has been shown.

16498



Witness: A. A. HARRIS, 16 February, 1928.

16498 Q And it may be, as His Honor suggests, that the very few and insignificant dust has resulted entirely. I mean to say that the dust carbon has been contained in a gaseous form, and that the mineral particles have been struck together by the heat of the explosion? A Yes.

16499 Q That seems the only explanation of the apparently unreasonable output? Q Yes, it is very difficult to be certain.

16500 Q Coming to these tests at Winkfield, if you think from New South Wales, were not the explosions all brought about by a gaspocket shot? A Yes.

16501 Q If a powdered explosive had been used, do you think there is any possibility that any of these dusts would have been ignited? A No, I think not, and I think that is the experience of the testing at the same station at home.

16502 Q So that, if the experiments had been made with powdered explosives, the report would have been somewhat previously a dust shot? A Yes.

16503 Q With reference to certificates of service, when the English Act of 1873 was passed, I think there was a similar provision giving certificates of service to Managers who already held that position? A Yes.

16504 Q Have you ever heard it suggested in Britain that the holders of certificates of service should be deprived of them, or that their certificates should be recalled because of their want of scientific knowledge? A No, not for that reason. Certificates have been questioned, and inquiries made, in some few cases. They have the same provision there as in the Act here, in this State, in order to make inquiries where representations have been made as to competency.

16505 Q Where there is some specific charge? A Yes.

16506 Q As the result, probably of some accident? A Generally speaking at the result of some accident.

16507 Mr. Justice: Q Have you ever known any inquiries be made into the fitness of any person holding a certificate who has not been named up with a director or committee of some kind? A I think the Waverley Company is now with this.

16508 Q Was not that a disaster? A There was an disaster.

16509 Q What was it? A There was a case of a man having been burnt, and it has not been reported.

16510 Q I suppose you regarded that as an accident? A Yes; it should have been reported, but it is not a disaster.

16511 Q I think I said "disaster or accident", I suppose you regarded that as an accident? A Yes.

16512 Mr. Justice: Q I take it that a holder of a certificate of service may, by reason of his practical experience and sound judgment, be a perfectly competent man to manage a mine, even if he should lack a knowledge of the chemistry of mine gases? A Yes; I know a number of very capable men who know very little about the chemistry of gases.

16513 Q I suppose there are numbers of men with scientific knowledge who would probably be quite unfit for the position of manager? A Doubtless there are.

16514 Mr. Justice: Q Do you mean by that that some of those who have gained the examination for their certificate of competency are unfit? A No, I do not suggest that.

16515 Mr. Justice: Q You mean it is possible for a man to pass the examination and yet not be practically fit.

16516 Mr. Justice: Q Although a Manager has all the necessary scientific knowledge, he may fail, I presume, through lack of judgment or through being short of a good fund of common sense? A Yes, I suppose there may be such cases.

16517 Q With reference to waste workings, I suppose you are aware that the report of the Radiation Inquiry placed a considerable importance upon the importance of the waste workings and the ventilation of air? A Yes.

16518 Q Is it not a fact that the proposals or suggestions were, if I am not mistaken, referred with some reluctance in the Department? A I am not aware of that. It was before my time.

16519 Q You hesitated the report, I suppose? A Yes.

16520 Q My impression is that it did not receive the attention that it should have received in the Department. I think that was just a year or so prior to your taking your present position? A Yes.

16521 Q Can you say whether this suggestion has been given effect in at any extent in the State? A With reference to the stopping of old workings?

16522 Q Yes, and the ventilation of air? A Yes, the old workings are inspected at all the collieries.

16523 Q At all events you had a special rule of some reference requiring them to inspect? A Yes.

16524 Q Do you know whether such a rule was in force at Dudley prior to the explosion? A No, I do not think that there was, so far as I can remember.

[At 1 p.m. the Commission adjourned until 2 p.m.]

#### ATTENDANCE.

(On resuming at 2 p.m., Mr. W. B. Frost attended to take shorthand notes of the evidence and proceedings.)

ALFRED ASHLEY ATKINSON, previously sworn, was further examined as under:—

16525 Mr. Justice: Q Can you give me the number of Inspectors, and assistants—that is the Imperial Inspectors—employed in Great Britain? A There are twelve Chief Inspectors and twenty four Imperial Inspectors.

16526 Q That is thirty six? A That is thirty six.

16527 Q Can you tell me roughly what is the usual output in Great Britain? A Over 200,000,000 tons?

16528 Q That is 200,000,000 tons? A Yes.

16529 Q What is the number of Inspectors here? A Five, including myself.

16530 Q What is the annual output? A 5,000,000 tons.

16531 Q That is nearly one Inspector for every 1,000,000 tons? A Yes.

16532 Q So that we have two Inspectors in each one in Great Britain according to the output? A We have a great many more. We have four times as many on the basis of the output.

16533 Q Coming to this matter of the inquiry of any, and the movement of the air now as the fact. Is it good practice to attempt to force the whole of the ventilation, or the whole of the ventilation of a district, round the working faces? A No, a certain quantity which escapes through the stoppings and the doors into the old workings and the return airways, then would work.

16534



16303. Q Are not certain other parts of the mine to be ventilated as well as the working level? A Yes.
16304. Q Then if the working faces are adequately ventilated, is not that all that is required? I think so.
16305. Q If 5000 feet of air are sufficient to keep the working places properly ventilated, there is no good reason why 5000 feet should be forced into them? No, I think it would be unnecessary.
16306. Q Would not the fact of attempting to force an undue proportion of air around the working places reduce the total volume of air in the mine? A Yes, it would put unnecessary friction upon the air.
16307. Q Thus if the air was conserved, as suggested in the working places, you could force as much as to whatever the other portions of the mine required their proper quota? A I do not follow you.
16308. Q If the air, as suggested, was conserved in the working places, you could have an idea whether other parts of the mine, which it is equally important to have properly ventilated, were so ventilated? A You could only judge by the ventilation in those particular other parts.
16309. Q In the same way as when you manage the amount of the intake of the shaft you judge of the condition of the working places by varying them? A Yes.
16310. Q If you measure the air at the intake of the shaft, you maintain by negative afterwards that the air is well distributed. Is not that in accordance with common sense? A Yes.
16311. Q And good working practices? A Yes.
16312. Q Some shafts have been laid on the fact that pillars were left in the 35-acre proof? Yes.
16313. Q If there was a leak, rightly or wrongly, in the first working of the place that no pillar had been made, and that no gas had been made while working the pillars, it would not be a inference on the management if they took no notice of a small pillar left in the workings? A I think it is not good management to leave pillars in that way.
16314. Q Small pillars are left, from one cause or another, occasionally? A Occasionally.
16315. Q But the fact of leaving a pillar or so in the 35-acre proof, when they were supposed to be free from gas, could have no particular significance in connection with this explosion? A The fact of a pillar being left is a good way that way causes the roof to rise upon it as a lever instead of allowing it to settle down gradually, and in that way it may cause trouble.
16316. Q Yes, but if an area of 35 acres has been worked out, I take it that you will agree with me, that the place has been consolidated to such an extent that there are no corners at all? A Excepting round the edges.
16317. Q I am speaking of the heart of the proof? A It would become consolidated if 35 acres had been worked.
16318. Q Perfectly consolidated—right? A I think so.
16319. Q So that there could be no space in that proof excepting these 2 acres known to be unspanned? A Excepting round the edges.
16320. Mr. James Smith. Q The pillars were pretty near the edge? A We have examinations as to where they were.
16321. Mr. Robinson. Q Do you not know Mr. Hamilton, Mr. Rogers' predecessor? A Yes.
16322. Q Was he a graduate of education, thoroughly qualified and up to date? A Yes, I think so.
16323. Q Do you know whether the methods of working adopted in Mr. Rogers' time differ very materially on those which obtained during the time that Mr. Hamilton was Manager? A I was not in the State when Mr. Hamilton was Manager.
16324. Q Do you see any reason why the ventilation of competency issued under the Imperial Act should not be recognized here? A I do not.
16325. Q Will it not tend to restrict the intake of educated and fit men mining men, if such certificates are not recognized? A Yes. I think that mining men in the old country have the most opportunities of becoming acquainted with mining matters, in all points of deficiency, than we have here, and, therefore, they should be equally as competent as the men who are here.
16326. Q There were ought not to be considered as being undesirable people so what is the reason? A No, I think, on the contrary, that they should be allowed to come here, and I think it would have a good effect if they did come.
16327. Q The experience to be gained in the coal fields of Great Britain, and the general conditions of the mine there, are more varied than here? A Yes.
16328. Q And you think that we ought to have the advantage of the men who have been trained under these varying conditions in the British coal fields? A Yes, I think so.

Resumed by Mr. Ritchie —

16329. Q Is there any legal obligation on the part of the mine proprietors to have the ventilation in places other than the working faces, the travelling roads, and the haulage roads? A I think there is under the special rules.
16330. Q Are there special rules in all colonies relating to this matter of ventilation? A Yes.
16331. Q You mean that a certain quantity of air has to be provided for each man, boy, and horse? A Yes.
16332. Q Is there any legal obligation to provide any given quantity of air for the travelling workings, apart from the air supply for each man, boy, and horse? A No.
16333. Q So that the sufficient quantity of air you need in the working faces on working parts receive attention? A That would be referred to simply with the law.
16334. Q Do you think that there should be a given quantity of air going into the waste workings, or travelling places, apart from that provided for by the Act of Parliament? A I think it would be a difficult matter to arrange for a definite quantity of air to be taken into all waste places.
16335. Q Would you not make provision for it by providing that an adequate quantity of air should be sent into those places? (He consents.)
16336. Q I think there is no provision at the present time compelling any given quantity of air to be sent into the waste places? A Quite so, but as a matter of fact you cannot prevent the air travelling by the mine always. The air that goes in must come out. Of course the Act of Parliament does not demand that the air shall be forced into each and every waste place in certain quantities.
16337. Q You know, in practice, large areas in a mine are abandoned for the time being? A Yes.



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- 15245 Q Is there any obligation on counsel preparators to keep these abandoned areas free from accumulation of gas? A No, there is nothing in the law.
- 15246 Q Do you think it customary some provision should be made for this? A I think it would be well if some provision were made with a view of these old workings being kept clear from the accumulation of noxious gases.
- 15247 Q As Chief Engineer is there nothing you can suggest? A I think it would be a difficult matter to arrange for a definite quantity of air to be sent to these places. At present I can think of nothing definite. It would require some little time to deal with the matter.
- 15248 Q I understand that you are working up for examination later on. Perhaps you will think over the matter and let me know about it? A Yes.
- 15249 Q You are the importance of it and you think it is necessary? A Yes.
- 15250 Q Mr. Roberts, do you say that it is desirable that there should be some provision requiring waste workings to be ventilated? A Yes.
- 15251 Q And as far as practicable kept free from noxious gases? A Yes.
- 15252 Q But I understand you to say that it is a difficult matter to carry out practice? A Yes, I recognize that.
- 15253 Mr. Roberts Q I told I understood you to say in the early part of your examination that you believed in watering long tunnels out as far as practicable, and that such watering was a partial preventative of explosions? A Yes.
- 15254 Q Do you think watering in every part of the workings and travelling roads? A If practicable, yes.
- 15255 Q What are the obstacles on the way which prevent you to say as far as practicable? A The other than water has on the roof and on the floor, and the fact that in some places there is not a sufficient quantity of water to do the work.
- 15256 Q Is a dusty street, assuming that the whole of the roads were properly watered, would that have any effect in preventing an explosion? A Provided it was practicable to do it.
- 15257 Q It would reduce the disaster? A Yes.
- 15258 Q Do you think it would be possible to do it? You gave some percentages as to ventilating the mine. What percentages of risk would watering, taking away, in your opinion? A Are we supposing a mine which is dry and thoroughly watered, and in which only safety lamps are used?
- 15259 Q I am leaving the question of safety lamps out of the question for the present. Take Mount Kemble as it was prior to the disaster. If that mine had been thoroughly watered before the disaster, would it, in your opinion, have prevented the disaster? A I think, anyhow, that it could not possibly have been an widespread.
- 15260 Q If the mine had been thoroughly watered, do you think it would have prevented the explosion? A If the mine which came out of No. 4 Right was of such a composition as to be inflammable, without any coal dust, there would doubtless have been an explosion, but it would have been local.
- 15261 Q The effect would not have been so great? A No.
- 15262 Q So what caused do you think that coal dust played a part in the disaster?—do you think that it was a more important factor than the gas itself, or was the gas more important? A I think the dust was the more important factor in spreading the explosion.
- 15263 Mr. Roberts Q Do you think if there had been no water used, but that safety lamps had been used, the explosion would have occurred? A I think not.
- 15264 Mr. Roberts Q At all events, with regard to watering, I take it that where it can be carried out you regard that as a safeguard which would largely prevent, or, at all events, lessen, an explosion? A Yes.
- 15265 Q Dealing with the Mount Kemble Colliery disaster, if that mine had been thoroughly watered, and taking it for granted that you suppose occurred—a quantity of inflammable mixture came out of the 4th Right—it would have caused an explosion, but it would not have gone beyond the 4th Right? A I think the explosion would have been fairly local.
- 15266 Q In that case, with your knowledge of the number of men in the vicinity of where the gas came from, would the number of deaths have been so serious? A The number of lives lost would have been greatly reduced.
- 15267 Q You give a percentage with regard to the reduction of risk where safety lamps are used. I think that you said the reduction was 75 per cent. Do you know of any instance where explosions have taken place where safety lamps are used commonly? A Oh, yes, several.
- 15268 Q Can you name them? A There is the Foston Colliery, the Foston Colliery, and the Tremore Colliery, along with several others.
- 15269 Q The Foston disaster was a serious one? A There were 160 deaths.
- 15270 Q When they using safety lamps that night? A Yes, with the exception of a small party of the strike survey.
- 15271 Q Did that small exception have any connection with the explosion? A The Foston disaster was caused by a blast from a shot on the workings about 250 yards from the downcast pit bottom.
- 15272 Q Are all explosions attributable to blasting where safety lamps are used? A The Foston disaster was. As to the Foston disaster, since you say that they were using safety lamps, and some things that it is an question of how deep when pumping out of water had taken place.
- 15273 Mr. Wainwright Q What light would be needed? A A naked light.
- 15274 Mr. Roberts Q I thought there were no naked lights used? A This was a naked light in the main roadway.
- 15275 Q You said in answer to Mr. Roberts that if safety lamps were used at a mine it would reduce the risk of explosion 75 per cent. A Yes.
- 15276 Q Do I understand that you advocate the use of safety lamps in the intake airways as well as in other parts of the mine? A I would only use naked lights a small distance from the downcast shaft or from the tunnel mouth.
- 15277 Q Then you do not mean that every lamp in the pit should be a safety lamp? A I think that with a certain kind of naked lights could be used near the pit bottom or for a short distance from the tunnel mouth.
- 15278 Q Within what limits do you think they could be used? Q I think it is desirable that naked lights should not be used for more than 200 yards from the tunnel mouth or from the pit bottom. 15451,



16400 Q You have made yourself fully acquainted with the number of openings into the 4th Right waste? A I have.

16401 Q How many openings were there from all sides? A I could not tell without looking at the plan [after looking at the plan]. I see there are two openings on the west side, one on the north side, and one on the east side, and no openings on the south side.

16402 Q That is, three openings altogether? A Yes.

16403 Q Would it be possible for the air to go through these openings into that part of the pool where the ball took place? A I do not think so.

16404 Q Why? A Because the area of the pool is 35 acres, and it would be consolidated enough at the edges.

16405 Q How many openings would there be that the air compressed by this fall would come through? A I do not quite understand what you mean.

16406 Q There were 3 chains of a fall which took place in the 4th Right. How many openings were there for the air to get through, in any direction you like. Was there only the 4th Right, or was there any other place? A Only the 4th Right, I think.

16407 Q Then, in your opinion, the whole of the air expelled by the fall went in the direction of the 4th Right opening? A I think so.

16408 Q It is said that the first fall was one of 2 feet 6 inches in thickness, and that the height of the opening altogether was 6 feet or 6 feet 6 inches? A I forget whether it was 5 feet 4 inches or 5 feet 6 inches.

16409 Q I think it was about 6 feet or 6 feet 6 inches? A It was somewhere about 6 feet.

16410 Q Have you made any calculation as to the volume of air that would be expelled through that opening? A No.

16411 Q After the fall, there would be left an opening of about 4 feet, would there not? A Yes.

16412 Q Can you work out a calculation? A Taking the height at 6 feet, there would be 5,972 cubic yards.

16413 Q That would be the volume of air that would be expelled if that 4 feet 6 inches of roof came down suddenly, as you are told it came? A Yes.

16414 Q Mr. Adams? After a fall, the debris usually occupies a greater space than before, does it not? A Yes, it does.

16415 Q Then the 2 feet 6 inches of roof falling might fill up all the space? A I do not think so.

16416 Q Mr. Adams? If they were pretty large blocks which fell there would not be such a large space filled up. [He agrees.]

16417 Q Mr. Bruce Rankin? I think that 4 feet would be a fair average as to the amount of space which would be filled.

16418 Q Mr. Rankin? I will take it at that. Having had a fall of 2 feet 6 inches in length with you and afterwards that there were a second fall. The roof did not come down in one solid block, but there were a series of falls, probably extending over an hour. A I said that I thought it was a large fall, and as answer to Mr. Rankin, who wanted to know some idea as to the probable direction of the fall, I said that I thought it would be within an hour, but, whilst I said that, it may have been very much within the hour. It is impossible to say.

16419 Q Would the second fall, having a narrower opening, be likely to discharge a greater quantity of air than the first fall? A Well, provided that the 2 feet 6 inches came down as a solid block I think that the first fall would expel the greater quantity of air.

16420 Q Have you heard, or seen, any evidence which would lead you to believe that the first fall discharged a greater quantity of air through that opening than the other fall? A No.

16421 Q Have you heard anyone state that any damage at all was done by the first fall? A No.

16422 Q Does it not appear to your damage that the first fall, which would discharge the greater quantity of air, did no damage, and that the second fall, which had so much to operate upon, did the damage? A I think it strange if the 2 feet 6 inches came down, as suggested, as a solid block.

16423 Q Even if it came down in the same way as the second fall did, that it can make you as reasonable that the first fall, which had all the fuel on and had to operate upon, should have done no damage whatsoever, and that the second fall, which had not the fuel on, should have done so very much damage? A I admit that I cannot account for it.

16424 Q In view of that fact, that it not seem almost ridiculous to think that the second fall did all the damage, and that the first fall did no damage at all? A No, we can only be guided by what, in our opinion, are the results of what did happen.

16425 Q Of course, your theory is that the second fall liberated the gas, and at the same time forced it out? A I think so.

16426 Q You have no personal knowledge of anything of that kind having occurred in the north previously. You say that you have no knowledge of any strikes in the north containing gas? A That is so.

16427 Q Think it is more surprising on your part? A No. After all, there is a certain amount of conjecture, but we must be guided by the results, by the evidence of facts, and by the general probabilities.

16428 Q Supposing the second fall did take place and discharged a quantity of gas which was liberated. By the way, do I understand that the second fall liberated the gas, as the first fall? A I think I have suggested that there might have been a small accumulation of gas at the mouth of the first fall, but I think that the second fall liberated the gas.

16429 Q You still adhere to the doctrine that the second fall liberated the gas whilst it was falling? A That is my opinion.

16430 Q If the last part of the fall was so heavy, and caused a considerable volume of air to travel along, how do you account for the fact that Warrand's light lit the gas. You have already told us that there was no reduction of force from the spot where Warrand's body was found? A I have not said that there was no reduction of force. I said there was force along the 4th Left, also towards the north, and also to the east. The force from the 4th Right to the 4th Left, what little there is, is stopped.

16431 Q But was not Warrand's body found on the right side of the 4th Left? A Yes, it has been so reported.

16432 Q And the indications of force on the 4th Left were coming from outside direction, making towards A Yes.



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16518. Q That is not the radius of force because of contact with Morrison's light? A The position in which Morrison's body was found is so important that that was the exact spot where the gas was ignited.
16519. Q You think that the place where Morrison fell the gas was not the place where he was found? A I do not think so. It would be impossible to define it. After you have been ignited a body may be found some distance away from that place.
16520. Q Was not the body found where Morrison's duties compelled him to be? A His duties compelled him to be 14 or 15 yards on the outside side of where the crash was, so as to shade the tube so the crane has to be 14 or 15 yards on the outside side of the junction of the two roads, one of which went to the 4th Left and the other straight up.
16521. Q You are sure it was not the 4th Right road? A I understood that he was there for the purpose of shading the tube on the 4th Left and sending them to the plants straight up and to Morse.
16522. Q How do you account for the clear and distinct evidence of force, in all directions, opposite the 4th Right? A There is no difficulty in connection with the 4th Right and the 4th Left, but on that point of road there was very little to indicate force, but what little there was was apparent to be slight.
16523. Q That is from the 4th Left? A That is from the 4th Left.
16524. Q Then you admit that the greater evidence of force was from the 4th Right? A No. From the 4th Right to the 4th Left there was very little to indicate force, but what little there was was apparent to be slight.
16525. Mr. Robertson. Q There were few obstacles such as grates about? A Yes.
16526. Q They were not there in the kitchen about? A They were not there to be trampled about.
16527. Mr. Robertson. Q How do you account for the fact Morrison still having his light there to light the gas? A The gas means having his light on the engine road.
16528. Q I mean, how do you account for his being able to keep a naked light in face of the current which would be caused by the fall? A That difficulty has presented itself to me. I think that when the force of air came out of the 4th Right, it would be reduced by coming across the travelling road, which would set up a buffer valve, and the more would apply to it when it got to No. 1 main level.
16529. Mr. Robertson. Q You think that the energy of the blast would be dissipated to a large extent? A I think it would to a large extent. I think that the light would have been left to light the gas.
16530. Q If the blast was so slight as to die away before it reached Morrison, do you not think that the air in the engine roadway was sufficiently strong to take off any fuel matter and pass it off outside, and not let it come (up at all)? [No answer.]
16531. Q What I mean is that if the radius of air in front of the blast died away as rapidly, then it had not sufficient energy left to get young Morrison's light out, do you not think that the energy of the air in the return street would be sufficient to take it outside, instead of letting it come in? A It evidently has not been so. That is the only way I can explain it.
16532. Q I think that your evidence is clear enough, that you still think there was gas in that back heading, although you do not now regard that as the origin of the first explosion? A I think there may have been a small premature of gas there.
16533. Q And there is evidence of curved dust—you have formed your opinion as regards that, and the other evidence of force in that direction? A Yes.
16534. Q Would it be at all possible or feasible that the gas which was in that back heading, was ignited by either Morris or his son, which caused the first explosion and so struck the struts as to cause a fall in take place on the 4th Right and explode the fuel air which caused the disaster? A I do not think that was possible.
16535. Q That was your first idea? A I was in doubt as to whether the explosion originated at that point or at the 4th Right.
16536. Q Do you not think it is just as likely that Morris lit the gas in the back heading, as that Morrison lit the fuel matter that came out of the 4th Right? A Having regard to the forces I have observed, and being able to more thoroughly understand the place, I do not think that that is possible.
16537. Q There was no other light than Morrison's which would be likely to light the gas coming out of the 4th Right? A Well, that was the nearest light, and it was the light in the direction in which the air current went past No. 4 Right.
16538. Q Would it be possible that the gas was so thick where it got Morrison's light that it burnt there and exploded afterwards? A Do you mean back from the 4th Left?
16539. Q Was the air so heavily charged with gas that it was really beyond the explosive point, and that it burnt until a gas sufficiently mixed with air so made it explosive. Would that be possible? A I do not think it would.
16540. Q You think that the gas coming from the 4th Right was at explosive point all the time, and that it was reflexively mixed with staccato air? Would it not need a cushion of air in front of it? A There was a cushion of air passing the 4th Right.
16541. Q I take it that the gas went in both directions? A Yes.
16542. Q A volume of gas would be forced out, and it would take some time to get sufficiently mixed with the air. Would it not burn instead of exploding? A I do not know of any similar case which has happened. I think it is unlikely.
16543. Q Is your opinion it was at explosive point all the time? A After meeting No. 1 main level, it was.
16544. Q Is there any evidence of force outside, from where Morrison was found? A Not between the 4th Left and the 4th Right.
16545. Q There is no evidence of force between the 4th Right and the 4th Left? A No, not much.
16546. Q Do you not think it strange that if the actual explosion took place off Morrison's light, there should be no indications of force outside? A It is difficult to indicate evidence of force on all such occasions, especially where conditions are as the spot.
16547. Q Do you think that the gas was lit by Morrison and that you could find no indications of force on the outside side of the 4th Left where you say it started from? A You find all the indications of force on the outside side of the 4th Right.
16548. Q But none between the 4th Right and the 4th Left? A No.
16549. Q Although you say that that is where the actual explosion took place? A In my opinion it did.



16394. Q Is that convenient? A I think it is. You would make all the fence which you observe in an employee connected with a theory.

16397. Q The part between the 4th Right and the 5th Left—in there are a part those which is deep? A Yes, there is a little water there, about 3 inches below the 4th Right.

16400. Q On the outside side? A On the inside side.

16403. Q Was that sufficient to prevent the dust being expelled? A Not on the inside. It was only deep a little on the floor.

16410. Q If you had been Manager of the Mount Kennedy Colliery prior to the disaster, and knew that you had a large area of coal ready to fall at any moment, what steps would you have taken to prevent any possible danger arising from the fall? A The first precaution would be to remove the workmen from the vicinity.

16411. Q What else? A See you supposing that there might be danger of gas?

16412. Q I am supposing that you are Manager and that you do not know what danger there is ahead, but that you have 2 thousand men likely to fall at any moment? A If I had expected gas to be given off, I would have had safety lamps used.

16413. Q With the knowledge which you had of the colliery what would you have done? A Nothing, so far as I know, that more than 200,000 cwt of coal has been loaded in the colliery without giving off any large quantity of free gas resulting in any accident. I do not know that I would have done anything beyond removing the workmen.

16414. Q Have you ever heard of any gas being seen at all in that colliery, or have you had any evidence of gases from any fall previously? A I heard of Gallagher being burnt.

16415. Q I mean through a fall in the waste work in that? A In connection with Kenneth?

16416. Q Yes? A No, that I am aware of.

16417. Q You heard someone say that he had had a big fall—in that below but that he never took any notice of them? A I forget his evidence.

16418. Mr. Atkinson? I think Mr. Jones denied that. I charged him with having said that to an bet he denied having said it. He believed so that he said it to me.

16419. Mr. Atkinson? Q The only reason that you have got for supposing that gas came out of that waste when the fall took place, is that the disaster happened? A Yes—and also having regard to all the circumstances of facts that I have observed since the disaster.

16420. Q The roof was open when you went there first? A Yes.

16421. Q You tested the gas? A Yes.

16422. Q And you found none? A No.

16423. Q Is that consistent with your theory? A Yes, are frequently unable to find gas at a place after an explosion.

16424. Q Although you could not find gas there where you think it came from, you find it elsewhere? A Yes.

16425. Q In several places? A Yes.

16426. Q I think you also told us that you rarely have any case in which gas is given off where the coal in the Southern district? A I have none but I have read of it in other places.

16427. Mr. Jones Smith? The history of the Southern coal district is loaded.

16428. Mr. Atkinson? It is certainly over fifty years.

16429. Mr. Atkinson? Q That is sufficiently long to have an accumulation of gas if it is given off. Do you not think it more likely that the gas was there before the fall took place, or was of the fact that you found gas being given off in the waste which you have there, and that you do not know of any case in which it has been given off in the waste? A It is possible, but I think some of that gas would have been found.

16430. Q How could it be found if they come here and tell you they did not look for it? A Men were travelling as that travelling road every day.

16431. Q But if they did not go into that part and examine for gas? A We have it in evidence that they went up to the gas edge and they would find it there.

16432. Q There may have been many thousands of feet of gas in the gas, but none to be got at the gas edge? A That might be so, but gas naturally goes into the highest parts.

16433. Q So far as you know the gas may have been there before the fall? A It may have been.

16434. Q I want to ask you also about the way in which your inspectors carry out their examinations. Have you any formal written down for their guidance in the examination of different? A Showing the instructions are written instructions. Occasionally directions come from the Manager and they may have them forwarded to them.

16435. Q Have you anything in writing instructing them in making examinations of the waste workings? A They are supposed to examine the working places.

16436. Q I am speaking now about the waste workings? A Yes, they are supposed to occasionally examine the waste workings.

16437. Q If there is anything written, it would be in the form of a minute? A There may have been a minute in relation to it, but I do not know.

16438. Mr. Jones Smith? A I think there was a minute by Mr. Sydney Smith when the Bookton disaster.

16439. Mr. Atkinson? Q Do not the reports show that they make an examination? A Yes.

16440. Q Did you ever make an examination with your inspectors? A Frequently. I have also seen from their reports that they have inspected the waste workings.

16441. Q Do you know whether there was any reference to any examination of the waste workings in the Inspector's report placed before me? A I do not think there was.

16442. Mr. Atkinson? Q Did you think it necessary to inspect your inspectors with regard to such an ordinary course of duty? Do you not think it would come to them that it would come within the scope of their duty? A I think they must be afforded a certain amount of discretion.

16443. Q Would they think it necessary to be instructed before inspecting waste workings? A I do not think so.

16444. Mr. Atkinson? Q You know that when written instructions are given to prevent they sometimes ignore them? Yes.



Witness—A. A. Johnson, 12 February, 1922.

16208. Q. Does it not occur to you that Inspectors may feel sometimes in carrying out their duties? A. Yes, they may feel so well as any other man.
16209. Q. Do you not think that it is your duty to improve upon your Inspectors the necessity of carrying out their instructions? A. I do frequently.
16210. Q. Do you realize the importance of the examination of the waste workings? A. I do.
16211. Mr. Bruce Smith. [Mr. Johnson went to the back holding of No. 1 as soon as he started the mine.]
16212. Mr. Smith. [That was after the disaster.]
16213. Mr. Bruce Smith. [It shows that he recognized the importance of visiting the place.]
16214. Mr. Smith. Q. A lot of people, most of them after the disaster, but no one went before. The more important question is what they did before the disaster. Do you know whether any of your Inspectors ever made an examination of the waste workings? A. I know that Mr. Brown has done so.
16215. Q. Did he give you a report in that effect? A. I do not know anything about a report, but he has mentioned it to me.
16216. Q. He has gone to the waste workings to examine them? A. Yes.
16217. Q. Do you know how long the Inspectors take on their examinations? A. Do you mean how many hours?
16218. Q. Yes? A. From three to six hours.
16219. Q. And it is the greater portion of their time taken up in going round the working places? A. The greater portion of their time is probably.
16220. Q. You are not prepared to say that their time is wholly taken up in going round the working places? A. No.
16221. Q. Do you know whether Mr. Brown ever made any examination of these waste workings? A. I do not know whether he did or not.
16222. Q. He never made any report to you about them? A. No.
16223. Q. In the present, generally, for your Inspectors to make reports without mentioning the waste workings at all? A. There are no definite instructions that they must mention the waste workings, but they generally do.
16224. Q. Do you consider it necessary to lay down as part of their duty that they shall make personal examinations of the waste workings? A. I think that they would do so on their own initiative, and having regard to their mode of duty.
16225. Q. You would leave it to their own judgment? A. With verbal instructions from myself.
16226. Q. Do you not think it necessary that Government Inspectors should have some clock placed upon them, to see whether they do their work or not. It appears you admit that Mining Inspectors may fail to do their duty. Do you not think that there should be some method of checking any portion of their work which it may be thought desirable to check? A. I think that when you start to lay down laws and fast rules, you make more like machines, and do not use their brains to the extent that they otherwise would.
16227. Q. I suspect it is better to have hard and fast rules that others will obey, than to have no rules at all. However, you would prefer that the Inspectors should be left with a free hand? A. I say that they should be allowed a certain amount of discretion.
16228. Q. You admit that it is possible for a man to have free rule as in all the working places, whilst at the same time danger may be taking in the waste workings? A. Yes.
16229. Q. And no Inspector might report that he found the working places all right, and he might have a catastrophe in that effect and yet you might have, on the following day, a disastrous explosion? A. Yes.
16230. Q. In view of all the possibilities do you not think it necessary that some rigid instructions should be given to have all the waste workings examined, not only by the military officials, but by the Inspectors? A. I think it is necessary that they should report them from time to time, but I do not think it necessary to give rigid written instructions.
16231. Q. Supposing you put all the Inspectors into the witness box, and they admitted that they had not made an examination of the waste workings—would you think it necessary then? A. Yes.
16232. Q. If they admitted that they had only made an inspection once in twelve months, would you regard that as being sufficient? A. No.
16233. Q. Do you not regard an examination of the waste workings as of more importance than an examination of the working places? A. No. I cannot say that I do.
16234. Q. If the examination is traveling round the working places there is little likelihood of serious cases being found there? A. Provided the ventilation is all right.
16235. Q. With that but stating you in the box, you still think it more necessary to examine the working places where there was good ventilation, than to examine the waste workings where there is no current at all? I did not say that it was unnecessary to examine the waste workings.
16236. Q. I ask you whether you do not regard an examination of the waste workings as being of more importance than an examination of the working places? A. I regard an examination of the waste workings as being of equal importance to an examination of the working places.
16237. Q. Now, do you think that your Inspectors may regard round the working places as the waste workings as to the examination of the working places? A. I think they do.
16238. Q. Do you think that they devote as much time to an examination of the waste workings as they do to an examination of the working places? A. I think they devote more time to an inspection of the working places.
16239. Q. I never comparatively speaking, of course, because there are more working places? A. Yes.
16240. Q. Do you think that your Inspectors have done these days, when it is provided that an Inspector of the waste workings should be made explicit and the reports look shows that the inspection has been made only once a month? A. I think they have not.
16241. Q. Have you any objection to your Inspectors' reports being open for the inspection of the workmen? A. Yes, I do not think that it is desirable.
16242. Q. What objection can you have to the public interest? A. There are several objections, but they do not strike me at the present moment.



16740 Q Have you any reason, beyond that of the public interest generally, why they should not be open for the inspection of the workmen? A Yes, I think that an inspection may observe something which although not immediately dangerous would furnish danger, and by making that known to the workmen they might become unconsciously warned.

16741 Q Have you any report in your possession which would be likely to cause an alarm working in New South Wales? A Well, I have an last one in my mind. I do not think it is desirable to replace it here, but I will explain it to the Commission.

16742 Q Is there anything in those reports which you have laid before the Commission which you think ought not to be disclosed to the workmen? A No, not in those reports.

16743 Q Do you not think it desirable that the workmen should see the certificate of a police constable who has been appointed to examine the mine in these intervals. Do you not think that they should know what the purpose of the certificate is? A I think the matter should be left in the hands of the Minister.

16744 Q You do not mean to say that the great body of the workmen should be unable to see the reports? A I do not think that the reports should be made public.

16745 Q Do you not know that the Minister himself promised that those reports should be made public to the miners? A I remember that a Department was told on the Minister's word to make public to the miners, but I forget just now what the nature of the promise was that was made to the deputations.

16746 Q You know that any reports which the miners themselves may have made have to be open for the inspection of the mine officials, and for the whole of the workmen? A Yes.

16747 Q You know that the reports of the deputies are open to the inspection of the workmen? A Yes.

16748 Q Is there anything further that you can advance, other than that the miners would be aware if they saw some of the reports, why those reports should not be made public to the miners? A There is nothing that strikes me at the moment, but I know that there are other reasons.

16749 Q You think the reports would cause the miners? A They might.

16750 Q In view of the fact that the miners want those reports to be open reports, do you know of any reports which the miners have seen which has caused alarm? A No.

16751 Q You are merely guessing that it might cause them? A Well, I suspect it might be so.

16752 Q I mean that it was merely a matter of opinion? A It is a matter of opinion.

16753 Mr. Bruce Smith Q A great many of the reports have given statements as to the effect that the evidence given as to gas is more than twice the amount to go into a mine.

16754 Mr. Justice Q If the inspection found gas, but stated that with the ventilation travelling there would be no danger, that would not be likely to cause the miners. They hear of small quantities of gas every day. But you say that you do not think it is worthy of a lead to let them see these reports, and so let them know what the Government officials have to say in these matters? A I do not think it is desirable that they should read these reports.

16755 Q That is the only reason which you advance—that they may be scared? A Yes.

16756 Mr. Bruce Smith Q Has ever such a thing been done in Great Britain as to allow the miners to have access to the official reports? A No.

16757 Mr. Justice Q I think you say that miners have given evidence to the effect that they had a knowledge of gas being present at Kewdale. You said that they were legally bound to report that, and that in so reporting it they may have been contributors to the disaster? A I believe that some of the officials and some of the miners knew of the existence of gas.

16758 Q You heard the evidence that the miners reported to the officials? A Yes.

16759 Q Who would be to blame in that case? A The officials.

16760 Q And not the miners? A No.

16761 Q When a miner has reported to an official he has done his duty? A Yes.

16762 Q And if the gas has not been reported by the official, the workmen are concerned, and the official is to blame? A Yes.

16763 Q You say that you think that General Rule 11 should be amended? A Yes.

16764 Q What amendments do you suggest to that rule as regard to the use of explosives? A I have nothing in my mind, it is rather a large undertaking. In its present form the rule is as involved as in its meaning that I think it should be made more simple.

16765 Q You mean that the effect of the rule should be left as it is, but that it should be simplified? A Yes.

16766 Q With regard to Rule 23, dealing with petrolised sites on behalf of the workmen, do you think that that rule should be altered in any way, it is to the effect that the persons employed may appoint any two of their number, or any two persons not being mining engineers to inspect the mine at their own cost. Why should the miners be prevented from appointing mining engineers to inspect a mine, if they think fit to do so? A I think the appointment of mining engineers would be undesirable.

16767 Q What reasons do you advance? A I think that if a mining engineer were appointed to make an inspection on behalf of the workmen, he might obtain information in respect of collieries which might be prejudicial to engineering industries, and he might make use of such information in his ordinary business.

16768 Q Could you not prevent that by saying that such a thing must not be done?

16769 Mr. Bruce Smith Q How would you know it?

16770 Mr. Justice Q Surely Mr. Adams may answer the question.

16771 Mr. Justice Q What kind of thing is done now in the Antislavery Cause.

16772 Mr. Justice Q Mr. Adams is now to think that a mining engineer appointed by the miners to inspect the mine might act in the interests of an adjoining mine.

16773 Mr. Justice Q My idea is that qualified persons should go on behalf of the workmen to see whether the mine is safe or not? A Yes, I see your object.

16774 Q In face of the responsibility which attaches to such an inspection, why should the miners be limited in their choice to the selection of people who may not be competent? A I think that for the reasons given it would be undesirable to allow mining engineers to make the inspection.

16775 Q You think so as Chief Inspector? A Yes.

16776 Q You think that the miners should be limited in the choice of persons to inspect the mine? A Yes, for the reasons I have given.



Witness—A. A. Johnson, 14 February, 1905

- 16717 Q You think that mining engineers may choose some portion of the working of a mine to the prejudice of a regular way miner? A Yes.
- 16718 Q Does not that mean not either with the proposition than with the mine inspector. We have had no complaint about that so far? [No answer.]
- 16719 Mr. Johnson Q We have had objections raised at several Board Commissions.
- 16720 Mr. Johnson Q I take your answer to be that mining engineers may choose something which may be to the interest of other parties. In other words, the person whom the miners appoint to make the inspection on their behalf may not be competent? A I did not say that at all.
- 16721 Q Is not that the effect of your answer? A I do not say so.
- 16722 Q You know that persons who have passed with first-class certificates are working as coal-miners? A Yes.
- 16723 Q Do you not think it is possible for a number of mining engineers to be working on coal? A It is possible.
- 16724 Q Do you think that they ought not to be appointed to make inspections on behalf of the men for fear of possible antagonisms which may arise? A If a man had been a mining engineer, but was working as a coal, I do not see how there could be any objection to his appointment. He would be a practical working miner.
- 16725 Q He would be a mining engineer also? A I do not think you could predicate him from making an inspection.
- 16726 Mr. Johnson Q Do you think that the working of the dirt might be observed so as to include any mining engineer's personal position. Do you suggest that it is the probability of a mining engineer being able to disclose the workings of a mine that should disqualify him from acting on behalf of the miners, so is it the fact that he is a practical mining engineer which should disqualify him? A The fact that he is practicing as a mining engineer.
- 16727 Mr. Johnson Q Do you not think that a man who has qualified as a mining engineer, but who has, notwithstanding, got to low end for a living would be as competent to take notes of what he saw in a mine as a person who is practicing as a mining engineer? A I suppose that he might.
- 16728 Q Do you not think that such a person would be as likely to take all the notes about a mine which he possibly could? A I do not think so—just if he was not practicing as a mining engineer.
- 16729 Q Do you mean to call engineers upon persons who are practicing as mining engineers? [No answer.]
- 16730 Mr. Bruce Smith Q Is it fair to talk about mining engineers upon anybody?
- 16731 Mr. Johnson Q Do you not think that a mining engineer, who is leaving coal, would be more likely to get hold of mining secrets, and to tell them, than a man who is occupying a good position? A Well, I do not discriminate as to the degree between the two persons.
- 16732 Q You say that a man who is actually working as a miner should be allowed to make the inspection, and that a man who is not working as a miner should not be allowed? A Yes.
- 16733 Q And you say that the man is not so likely to take notes of things, which he might not to take notes of, as the miner—that is the effect of your answer? A Yes.
- 16734 Q What reason can you see for choosing one person rather than the other? A I do not think I am able to give you any further explanation with reference to it.
- 16735 Q You say that one would be just as likely to gather information as the other—is not that the effect of your answer? A They might both have equal power of observation when going round a mine, but the working miner would not be so likely to disseminate information among neighboring miners as a mining engineer in actual practice would.
- 16736 Q Although the one might be a third best and the other a man in good position? A Yes.
- 16737 Q You would regard a mining engineer as pretty low down on his uppers if he was actually getting coal? A He would be.
- 16738 Mr. Johnson Q Have you ever heard of such men getting coal? A There might be some.
- 16739 Mr. Johnson Q Mr. Johnson has some men with licenses or certificates working in his colliery now.
- 16740 Mr. Johnson Q I do not think I am employing anyone who is a mining engineer.
- 16741 Mr. Johnson Q Is it not possible that a person who has gained a first-class certificate may qualify for a mining engineer? A Yes.
- 16742 Q Can you see any difficulty in such a man passing as a mining engineer? A No.
- 16743 Q You know that these men persons with first-class certificates working on coal? A Yes.
- 16744 Q Would persons working with first-class certificates be competent to take notes of a mine, such as mining engineers might take? A They might not be able to understand the interests of ordinary propositions in the same way that mining engineers would, although they may have passed through an examination.
- 16745 Q You know that evidence has been submitted to the miners that they have great difficulty in getting qualified persons to do the work of checking-up? A I have heard so.
- 16746 Q Do you not think that these business against the employment of qualified persons should be removed, and that the miners should be given a list hand in the selection of persons whom they regard as being competent? A I think that they should get miners who have passed examinations and would be quite competent to do the work.
- 16747 Q There may be miners who have passed first-class certificates, whose workmen cannot get on with. It does not necessarily follow that the man who has passed a first-class certificate is the man who is the most likely to give a true and faithful report of what he sees in the mine? A I understood that.
- 16748 Q There is a further suggestion. The Act mentions persons who are "working" miners. You know that that is a barrier? A I see no objection to the removal of the word "working."
- 16749 Q I suppose you know that it is a fact that men have had to go to Newcastle and work in a mine there in order to qualify themselves to come under the Act? A Yes.
- 16750 Q And you think that the word "working" should be removed? A Yes.

[The Commission at 4 o'clock adjourned until 10 o'clock the following morning.]



TUESDAY, 17 FEBRUARY, 1903

[The Commission sat at the Local Appeal Court, Birmingham.]

[Present.]

C. E. B. MURRAY, Esq., D.C.I. (PRESIDENT).

D. A. W. RODGERSON, Esq., COMMISSIONER.

D. RITCHIE, Esq., COMMISSIONER.

Mr. Bruce Smith, Barrister at Law, instructed by Mr. Wood, Chief of Selections Office, appeared on behalf of the Crown.

Mr. A. A. Lynght, Solicitor, appeared on behalf of—

- (a) the representatives of deceased miners, whereby, &c. (victims of the explosion);
- (b) the employees of the Mount Kembla Colliery (miners, wharfmen, &c.), and
- (c) the Mount Kembla Colliery Employees' Association (the Southern Mines' Union).

Mr. G. J. Barry, Solicitor, appeared on behalf of the Mount Kembla Coal and Oil Company (Proprietors of the Mount Kembla Mine).

Mr. A. A. Ashmore, Chief Inspector of Coal mines, was also present.

(Mr. J. Gaskett, Secretary to the Commission, was present to take shorthand notes of the evidence and proceedings.)

Mr. J. W. BAILEY was sworn, and examined as under:—

[This witness was called at his own request, and the Commission asked Mr. Bruce Smith, as a matter of convenience, to conduct his examination in chief.]

Examination in chief by Mr. Bruce Smith:—

16541. Q What is your name? A John William Bailey.

16542. Q You live at Newcastle? A Yes.

16543. Q How many years' experience have you had in connection with coal-mining? A Nearly twenty-

eight.

16544. Q And, of those twenty-eight years, how many did you spend as a miner getting coal? A Approximately three-fourths of the time.

16545. Q That would be twenty-one years; what were you doing during the rest of the time? A On the surface, and working in and about the mines.

16546. Q Have you ever held any official position, as deputy, or otherwise? A Yes.

16547. Q In what mine? A I held the position of foreman deputy in the Newcastle Coal Company's Mine, situated at Newcastle.

16548. Q For how long? A Somewhere about twelve months.

16549. Q And with regard to your twenty-one years' getting coal, was that all done at Newcastle? A No.

16550. Q Where? A England.

16551. Q What part of England? A North Staffordshire.

16552. Q How much of the twenty-one years did you spend there? A Eight or nine years.

16553. Q And the rest at Newcastle? A Yes; and New Zealand and Queensland.

16554. Q You wish to give the Commission the benefit of your knowledge on a number of subjects? A Yes.

16555. Q You understand that the old question of your dismissal from the Newcastle Company's Mine cannot be gone into? A No by this Court.

16556. Q That is what I mean. You leave that for another session. You have stated that you wish to give some evidence on the causes of explosions? A Yes.

16557. Q Would you be good enough to tell the Commission what you desire to include there on this subject of the causes of explosions? A Do you wish me to make a statement?

16558. Q Yes, I think so, because I do not know the extent of your opinion, and I cannot put a number of questions to you? A On the causes of explosions?

16559. Q Yes, what you wish to say to the Commission? A In my opinion the causes of coal-gas explosions may be attributed to the accumulation of gas in the mine on the part of the management, and the use of blasting of such gas by order of the management.

16560. Q The use of blasting of such gas by order of the management? A Yes.

16561. Q Then you advocate the greater number of the explosions in gas? A Yes.

16562. Q In cases in which no safety lamps are used, is that so? A Yes.

16563. Q Will you tell the Commission what has been your experience of gas in Australian mines: where have you seen it? A I have seen gas in the Newcastle Coal Company's Mine. I think that is about all within the Colony.

16564. Q Were safety lamps used there? A No, not when first discovered.

16565. Q In what quantity did you discover it? A The quantities were varying. I have seen it 1 mile from the rock, and some 4 or 5 feet from the face of the heading.

16566. Q Have you ever ascertained the percentage of gas on any of these occasions? A Not at the time, only by sheer reckoning.

16567. Q What do you call "sheer reckoning"—what is a miner's term? A Yes.

16568. Q You do not mean breadth or length, do you? A No. I mean taking the height, 5 inches from the roof, and multiplying that by the width of the heading and by the depth.

16569. Q Getting the cubic measurement? A Exactly.

16570. Q That is not what I asked you. I asked you if you had ever ascertained what percentage of gas there was mixed with the air? A In these cases I have referred to, it would be almost pure, because it was away from the air.

16571. Q Are they the occasions you speak of on which you discovered gas? A How many times?

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16542.



Witness—J. W. Kelly, U. S. Mining, 1898

- 18462 Q How many times? A Approximately I would find gas between forty and fifty times.
- 18463 Q Is your examination? A In my examination.
- 18464 Q And you know nothing about any other mines by personal experience? A Not at all.
- 18465 Q Gas you speak of any other mines of experience? A Yes, I believe that coal dust is an agent, in the cause of explosion.
- 18466 Q Have you had any personal experience of that, or are you speaking merely from your book knowledge? A I do not doubt to the nearest mining explosion.
- 18467 Q Yes. A No.
- 18468 Q You speak there merely from your book knowledge? A Just so.
- 18469 Q The book knowledge is open to the Commission. A Yes.
- 18470 Q They do I would want from you that it is the combination of gas and open light to which you attribute most of the explosion in a mine? A Yes.
- 18471 Q You have mentioned various causes, the generation of excessive heat of gas? A Yes.
- 18472 Q When do you wish to say about that; how do you think the accumulation of gas could best be prevented? A I wish to say that in conditions of gas can be prevented by mechanical, continuous and adequate ventilation.
- 18473 Q Do you wish to speak of cases in which the ventilation has not been continuous and adequate? A I do.
- 18474 Q Is what comes? A Is the Newcastle Coal Company's Mine.
- 18475 Q Is that the only one you mention that you have had personal experience of? A Yes, that is the only one.
- 18476 Q Is what respect as far as your own observation, gas, was the condition inadequate? A Because of the leakage of air into old workings, and the practice of drawing the air to bring the operatives up to the exposures, when the workings were at the same exposure.
- 18477 Q Do you approve of ventilating the old workings? A No, I think the old workings are better closed up the time.
- 18478 Q Suppose they will not go down, what would you do then? A Make them come down.
- 18479 Q How? A By extracting the pillars.
- 18480 Q And supposing the pillars are extracted, and still there are cavities left in the rock, what would you do then? Would you ventilate them? A If the pillars are extracted, the roof will naturally fall.
- 18481 Q And if it is a constant, and does not fall, what would you do? A I cannot answer off such a thing.
- 18482 Q You have said such with a thing? A No.
- 18483 Q Then I may take it as your opinion that, when once all the pillars are set, you would not bother about it any more? A No, I do not wish you to infer that.
- 18484 Q What would you do—I want to know? A If the roof is worked properly in sections, the pillars extracted, and a barrier of the last booth holed kept intact, with good stoppings, and a portion of the intake air going past there, it will be adequately ventilated.
- 18485 Q Do I understand that it is the practice to direct the air from the workings in order to direct the exposure? A Yes.
- 18486 Q Is what time do you know that to have happened? A The Newcastle Coal Company's Mine.
- 18487 Q That is the old story that you have told just ago? A It is both old and new to me, who have suffered as much from it.
- 18488 Q We will not go into the pathology of the thing—I want to know from you how long it is ago since you had personal experience of this being done? A My personal experience was in 1895.
- 18489 Q And you give evidence of your personal experience before Mr. Wiley as Commissioner? A Yes.
- 18490 Q Do you? I understand that that is what Mr. Wiley said of in the hearing trial.
- 18491 Q Yes, and I was fully gone into by Mr. Wiley.
- 18492 Q Have you had any experience, since you were in the Newcastle Company's Mine, of what is called the bottom rock? A No, simply because I was dissatisfied by complying with the Mine Act.
- 18493 Q Then you have had no experience since that you can show the Commission? A No.
- 18494 Q I take with regard to the discussion of the air? A No, an ordinary mine cannot have that privilege.
- 18495 Q I say you assume ventilation as one of the subjects in which you wish to give evidence. Have you any opinion to offer the Commission as ventilation, with regard to the present method, or any suggestion to make with regard to an improved method? A Yes, it is all but in those two words that I have already said, "ventilation and certainty."
- 18496 Q And you say suggest any better method than that adopted at the present time, provided it is carried out properly? A Yes, but ventilation is mostly profitable to my other.
- 18497 Q You would say why you think it is profitable? A In shallow mines, because ventilation means more work under power, because of the shallow dips.
- 18498 Q What do you think a shallow mine? A I would call it a shallow mine up to 500 feet deep.
- 18499 Q And you think that ventilation by means cannot be effective? A No, I do not think it is effective, now.
- 18500 Q I suppose you would think it far proof of its being effective if mines have been worked with more hundreds of men for a quarter of a century? A No, I would not think it was effective then.
- 18501 Q You would not think that a proof of its being efficient? A No.
- 18502 Q Do you wish to say anything further with regard to the advantages of gas over furnace? A Yes, the advantage of a furnace is that it produces, in my mind, at a low cost, almost double the quantity of air than the furnace would.
- 18503 Q Then it is on the ground of economy and effectiveness. A Yes.
- 18504 Q You have included in the list of subjects "Treatment of coal dust," I understood you have had no personal experience of coal dust explosions? A Not of the explosion of coal dust.
- 18505 Q And you have not had any experience of any mine in which coal dust has exploded? A I have had experience of a mine where, it is theory that coal dust, by the aid of a fall, and in the presence of a naked light, would cause an explosion in rapid, it should have occurred on this occasion.
- 18506 Q What mine was that? A The A. A. Company's Hamilton Pit Mine.
- 18507 Q The Hamilton mine is in Newcastle, part of the A. A. Company's property? A Yes.



- 14816 Q Was you in that mine when a large fall took place? A No, I was lookin' on the surface.
- 14817 Q You know of the fall? A Yes.
- 14818 Q Do you know the extent of the fall? A I know that it was a very large fall.
- 14819 Q But that is rather vague—what area did it cover? A I never heard the size.
- 14820 Q An acre or 10 acres? A Ten acres or more.
- 14821 Q Did you see it before it had fallen? A Yes.
- 14822 Q What height was the ceiling from the floor before the fall? A It varied from 3 to 6 or 7 feet, even.
- 14823 Q Did you see it after the fall? A Yes.
- 14824 Q Soon after? A No, it was here here three months afterwards, I think.
- 14825 Q Did it all fall? A Yes.
- 14826 Q Could you get in? A Yes, I went in with the late Seneca Inspector of Mines.
- 14827 Q Mr. John Dwyer? A Yes.
- 14828 Q How many shafts were there for very great risk of us to get away from that fall by? A There would be two or three, at least.
- 14829 Q Was there any line of life on that occasion? A Yes.
- 14830 Q How many? A Eleven.
- 14831 Q Mr. Dwyer? Q Was that a fall or a crash? A Well, some attributed it to a thrust, others to a fall.
- 14832 Q Mr. Bruce Smith? Q How soon the claims were injured? A One or two were killed by the falling material.
- 14833 Q Talking on their sides? A Yes, the supervisor was supposed to have started for want of fuel.
- 14834 Q They were badly exhausted? A Retreated.
- 14835 Q But were there any deaths or injuries on that occasion from the rock or the out of either or both of those springs? A Not to my knowledge.
- 14836 Q Was there any notable rock of air from that fall? A Yes.
- 14837 Q Of course you only know this from hearing? A No, I saw the rock.
- 14838 Q I thought you said you were not there? A I said I was lookin' on the top.
- 14839 Q Tell me when you saw the inside of that fall? A I saw the end dust come up that shaft so thick that you could almost stick a shovel into it.
- 14840 Q How many men were there in the mine at the time this fall took place? A The last shift would be in—say 100.
- 14841 Q I think you have told us that some of the 300 were injured by the rock of which they were not driven up against the ribs or up against the slope, or anything of that sort? A There were some injured, according to—[unintelligible]
- 14842 Q I am talking of those apart from the others who were either killed by the fall of the stone or embedded in the stone—were there who were embedded? I found afterwards? A Yes.
- 14843 Q Were any of the other people who were outside the mine at the fall injured or killed? A Not to my knowledge.
- 14844 Q Did you ever hear of any of them suffering in any way from it? A Yes, I heard of one man, a man named Sullivan, who suffered somewhat from—I do not know whether you could stick it in the chest, or rock of air or what.
- 14845 Q How did he suffer? I mean what means were affected, his sight, or hearing, or anything? A His sight seemed to be affected.
- 14846 Q Were his ears affected, his hearing? A Slightly, I think.
- 14847 Q Did he tell you that himself? A No, it was well known just about where I lived.
- 14848 Q That is the only instance in which you heard of anybody being injured by that fall? A Yes.
- 14849 Q Did you go to the hospital on the death of those people? A No.
- 14850 Q Why was that? A I do not know.
- 14851 Q What year was that all? A It was in the 22nd of June, 1909.
- 14852 Q Do you remember who was the Governor at the time? A No.
- 14853 Q You have no newspaper account of it with you? A No, not of that one.
- 14854 Q Do you remember what the feeling of the Governor's party was? A No.
- 14855 Q You told us that the dust came up out of that mine so thickly that you could not see with a candle, so you say? A Yes.
- 14856 Q What was the height of the shaft from the mine? A About 250 to 300 feet, say.
- 14857 Q Was it contained by fan? A Yes.
- 14858 Q Did the rock of air from the mine do any injury to anything, in the fan? A No.
- 14859 Q That was out of the way? A Yes.
- 14860 Q Were your lights used in that mine? A Yes.
- 14861 Q Can you tell me how the lights were placed with regard to the work of air? A Yes, they were put out.
- 14862 Q You wish to say something on the use of explosives? A Yes, only that: that I think that, if we have experienced that first in the ordinary powder mine, and they are placed with judgment, with good ventilation, and all dangers of the mine removed, there will be no danger in using the ordinary powder when.
- 14863 Q Then you approve of doing with the ordinary gunpowder? A Under those conditions.
- 14864 Q But do not you know that the risk from gunpowder is considered one of the most dangerous cause in relation to explosives? A One of the reasons, yes.
- 14865 Q And yet you advocate the further use of powder in preference to other explosives? A Yes.
- 14866 Q Do you regard it as a dangerous element? A Not when the precautions are taken that I have mentioned.
- 14867 Q Have you had any experience of other explosives but powder? A Yes, I have used dynamite.
- 14868 Q Where? A In Western Australia.
- 14869 Q Have you used any other? A I have used gelatinite, but not used it on the coal.
- 14870 Q What do you wish to say about the use of safety lamps? A The use of safety lamps may well be left to the discretion of the Mine Managers, when he is made to understand his responsibility by the proper authorities of the 'Miners Act.'



Witness—W. Riley, 17 February, 1933

10313 Q Do you approve of the proposal to allow an Inspector to order safety lamps into a mine? A No.  
10314 Q Why? A Because the Manager is the responsible person, and it should be left in his discretion or judgment as to when he should do them.

10315 Q Does you do not believe in shifting the responsibility from the Manager on to the Inspector?  
A No.

10316 Q Do you think that the interest of the Miners in carrying on the mine successfully and safely is the best incentive to his exercising judgment with regard to that matter? A Yes, if he has the responsibility and if section 10 of the Coal Mines Act is enforced.

10317 Q How you speaking to me about the particular kind of safety lamps to be used? A The Miners' Trusts is a good lamp, and the Howarth Detector.

10318 Q I am speaking now of your experience, because, if your opinion is based on lack knowledge, of course it is not open to the Commission as to you, what is your personal experience? A My personal experience is that the Howarth Detector is as good as any other lamp used.

10319 Q Have you had any experience of the hydrogen lamp? A No, only I have seen them, of course.

10320 Q Generally, as to the matter of ventilation, have you anything to say on that, anything you think would be of value to the Commission? A Yes, if the workings of coal mines were judiciously carried out, and the present Coal Mines Act complied with in all respects and that Act administered properly by the Mines Department, we should not have the trouble and the loss of life that are occurring enough as to day.

10321 Q Then I understood you to think that the Mines Act, as it stands, wants no alteration, if it is only properly administered? A There are a few amendments, amendments of detail I would call them.

10322 Q Have you suggested them at all? A Yes.

10323 Q You might let us have some suggestions? A The first and most important is that independent Inspectors should be established, so each Inspector made responsible for the administration of the Act in his own district.

10324 Q What do you mean by "independent districts"? A I believe in the abolition of the Chief Inspector's position, and each Inspector to be responsible directly to the Minister for Mines.

10325 Q Are they not responsible now? A No, I do not think so.

10326 Q You know, I suppose, that each Inspector has a district now, you know he has a certain group of mines placed under him? A Yes.

10327 Q And that he has the exclusive power of inspecting those mines? A Yes.

10328 Q So that that is a district, really, if you have a lamp and separate his group of mines from the rest, is every mine in a district? A Yes, but there is not the responsibility.

10329 Q We will come to that afterwards—we are talking now of the district. I want to find out where your inspection differs from the present—that is a separate district, is it not? A Yes.

10330 Q By what request would you alter that? A I would alter that so that the Inspector of that district would be responsible for the administration of the Act, in his own district, directly to the Minister.

10331 Q And you would abolish the position of Chief Inspector? A Yes.

10332 Q You would not leave any Chief Inspector to supervise those Inspectors at all? A No.

10333 Q In which respect would you suggest that the Inspectors should be made responsible, where they are not responsible now? A The Minister for Mines could hold them directly responsible for the administration of the Act in their own districts, and, if they were made to feel the responsibility of administering that Act, they would be justified if it were broken to their knowledge.

10334 Q Could the Minister hold them responsible now under the Act? A He could if he used it.

10335 Q Then it is the Minister you feel back with? A The Minister and the Chief Inspector.

10336 Q Now we are getting down to bed rock? A Yes.

10337 Q First of all you would abolish the Chief Inspector—which would you do with the Minister to make him sensible of his responsibilities? A I suggest our Parliament should do that.

10338 Q We cannot help that here, you have no suggestions to make about that question to the Commission? A No.

10339 Q You are of opinion, then, that, by abolishing the Chief Inspector, and by making each Inspector directly responsible to the Minister, and by leaving a Minister who is thoroughly sensible of his responsibilities, there would be less disasters than there are now? A Yes.

10340 Q Is that your own idea, or have you heard it from anybody else? A It is an idea that I have had for a number of years.

10341 Q Have you told it to anybody? A Yes, I have mentioned it to many.

10342 Q Did you mention it to Mr May? A Yes, I have talked with Mr May.

10343 Q You told him all of it? A Yes.

10344 Q Do you know he is advancing the same thing that you told him? A Yes, he is of the same opinion as myself.

10345 Q I have gone through your little list—is there anything more you would like to say to the Commission? A Yes. I think that under the 10th section of the Coal Mines Act there should be an amendment.

10346 Q That is with regard to the holding of an investigation? A Yes.

10347 Q How would you amend that? A I would amend it so that practical experienced men would constitute a competent Court to look into and try to discover the causes of the various disasters in mines.

10348 Q But does not the Act provide for competent men? I will read you what the Act says, and then you can state in what respect you think it ought to be altered. "The Minister may appoint a competent person—or persons to enquire into and report on the cause of any disaster." "The Minister may appoint a competent person—or persons to enquire into and report on the cause of any disaster."

10349 Q "To hold the investigation, and may appoint any person or persons possessing legal or special knowledge to act as coroner or assessor in holding the investigation"—that is the appointment of assessors that you object to, they ought to be men with a practical knowledge of mining? A No. I think that assessors should be selected in much something like this: Thus a competent person may be appointed with a practical experienced man accustomed to mining principles and practices.

10350 Q Mr. May? I do not know then it has always been a question, but I know that it is because a question once for the deliberation of the Department which the word "competent" means. It is that, perhaps, that Mr. May is alluding to indirectly.

10351 Q Mr. May? I do not know then it has always been a question, but I know that it is because a question once for the deliberation of the Department which the word "competent" means. It is that, perhaps, that Mr. May is alluding to indirectly.

10352 Q Mr. May? I do not know then it has always been a question, but I know that it is because a question once for the deliberation of the Department which the word "competent" means. It is that, perhaps, that Mr. May is alluding to indirectly.

10353 Q You would strike them altogether from those boards? A Yes.

17263



16005 Mr. Brown: I may say, Mr. Brown Smith, that it was I myself who pointed out that it was very doubtful whether a lawyer or a District Court judge would be called a competent person, if he had not got a knowledge of mining.

16006 Mr. Brown Smith: With the help of the competent mining men, he may be a very competent machine for balancing evidence.

16007 Mr. Brown: Undoubtedly.

16008 Mr. Brown Smith: Q. This is your opinion, is it the first place, you would have no lawyer upon the board of inquiry. What sort of man would you have for presiding over these competent men? A. A Supreme Court judge.

16009 Q. He is supposed to be a lawyer, even a Supreme Court judge? A. Well, it might be a mine.

16010 Q. I want to get out what you want. I do not want to look about the book, you say you would have a Supreme Court judge, but he is a lawyer, who not? A. Yes, but the lay man knows the mine.

16011 Q. Did you forget that a judge was a lawyer? A. I forget that. I do not know the steps up to the legal profession.

16012 Mr. Brown: Mr. Bailey may have had some experience of men to that extent he is forget.

16013 Mr. Brown Smith: Q. I would like to know what type of man you think most competent to preside over a board of this kind, and why? A. Any person accustomed to the technicalities of taking evidence would do.

16014 Q. Then what class of men do you want to help him? A. The preliminary interest could be represented, and the Mines Department and the workmen could be represented.

16015 Q. Tell me any other action that you would suggest an amendment of? A. I think that General Rule 4 should be so amended that the Mines Department should govern the other that complies with that rule.

16016 Q. This rule has reference to the inspection of the mine before the men commence work—you mean to say that, if the deputy miners having found gas—he should be empowered to report it, if it is there? A. Yes.

16017 Q. That would be very difficult to put into the Act, or into a rule? A. It could be put into the Act, the Act could be amended for that purpose.

16018 Q. An amendment, in amending the Act, you think every amendment should be given by the management to a deputy to report? A. Yes.

16019 Q. You might come any other suggestion? A. Take an exact copy of the examining deputy's report should be placed upon the board; that is, that when he has made it in the book for the purpose, an exact copy should be placed upon the danger board into each district of the mine.

16020 Q. The men now are allowed to see the book? A. Yes, but what is so in not the same as it is in the book; what is written on the board is not exactly what is written in the report book.

16021 Q. Is there any difficulty in the men getting the nature of the book and looking at the book themselves as they go in? A. Yes, a difficulty is made.

16022 Q. By whom? A. By the management.

16023 Q. But it is not provided in the Act that they should see the book if they wish? A. Yes, but—[Interposed.]

16024 Q. You mean it is not done in practice? A. I mean to say that the men do not go to that extent for fear that they would be discouraged and berated.

16025 Q. Is it not open to men who find that they are not allowed to do what the Act entitles them to do to complain to their lodge, and get a representation from the lodge that the book is not exposed for the men? A. Sometimes or under other complaints are made to lodge, the men are, to a certain extent, hindered by their wages being reduced in an indirect manner.

16026 Q. If the Act provides that every mine is obliged to see the book, and if they find that they cannot see it, is it not a very easy matter for them to bring the question up to their lodge, and get the lodge to represent to the management that the men wish to see, and, supplying any particular case, or complaining that they do not see the book? A. It is easy, but it sometimes would be very costly, for the simple reason that the names of the men who made this suggestion in the lodge would appear in the next day paper, and the Manager would read it at his dinner table.

16027 Q. But that is an infirmity in the administration of the lodge? A. But, when all men are afraid, what can be done?

16028 Q. But, if the lodge manages its work in that way, that has nothing to do with the Act, or with the spirit of it. You are not looking to you for practical suggestions, but you have to do with the water, but you cannot make law a duck, and, if the book is open under the Act, to the men, what more can the Act do? I have even a man having to go into a woman's cabin and turn over the covers of the book, and, if the same report were placed on the danger board, he could see it as he passed by her work.

16029 Q. Well, that is your suggestion. The Commission can consider that. What else do you suggest in regard to the Act? A. I would have an amendment included in the Coal Mines Act that the examining deputy of the mine should be the leading deputy of that mine, and that he should have authority to instruct the day deputies what to do in his house.

16030 Q. You would not have them of equal power? A. No.

16031 Q. One should be over the others? A. Yes.

16032 Mr. Robertson: But the day deputy has equally important duties?

16033 Mr. Brown Smith: Q. Mr. Robertson says the day deputies have equally important duties to the night deputy? A. No.

16034 Q. In what respect are they equal? A. Inferior in this way, that the examining deputy sees the mine under different conditions from the day deputy, and when he leaves that mine he should have authority to instruct the day deputy, who is the last man to leave it, that the ventilation for certain places, say, for certain groups of gas, should be properly attended to, and that they should be properly ventilated the last thing after the miner has done his work; so that when the examining deputy goes round in the morning he can find those places clear of any accumulation of gas.

16035 Q. But suppose that both the day deputy and the night deputy direct their attention with equal care to the ventilation of the mine, will you not get the same result? A. No.







17614. Q The general position—you are not going to refer to your own case? A Yes, I wish to tell the Commission. — (interrupted)

17615. Mr. Bruce Smith: I understood, Your Honor, from that letter, that the Commission would not go into that.

17616. Mr. Bruce: We do not know yet what Mr. Bailey is going to say.

17617. Mr. Bruce Smith: Q What do you want to say? A I wish to say that I am boycotted at the present time for complying with the Miner Act; and for three years my wife and children have suffered through this principle of boycotting.

17618. Q Do you know of your own knowledge that you are boycotted? A Yes.

17619. Q How do you know it? A Because I cannot get work as various miners in the district.

17620. Q Are there any other men who cannot get work? A Yes.

17621. Q Are they boycotted, all of them? A No.

17622. Q Then the mere fact that you cannot get work is not, of itself, conclusive proof that you are boycotted? A To my mind it is.

17623. Q Then, would it prove the same result with all other men who are out of work? A No.

17624. Q Then you must have other reasons for thinking so? A Yes.

17625. Q What are the other reasons? A The other reasons are for asking known, the contents of you is a mine contrary to a Manager's orders.

17626. Q I asked you what were the other reasons for your believing that you are being boycotted. The mere fact that you are out of work does not prove it. Do you know, of your own knowledge, any other reason? A Yes—where men are immediately put on to work it seems when I have immediately before, equal for work.

17627. Q You mean that they are preferred to you? A It seemed like it.

17628. Q It is possible that they may be considered better workmen than you? A How would a Manager know that if they were stronger?

17629. Q He may be a physiognomist, for one thing, do you say, you did not count upon that, I suppose. Well, that is the conclusion you come to at all events, that you are being boycotted? A Yes.

Cross examination by Mr. Lynght—

17630. Q Do you hold a certificate? A Yes.

17631. Q What certificate? A A theoretical certificate of competency.

17632. Q Did you pass the same? A Yes.

17633. Q Regarding your career then, if a Manager's certificate was cancelled for negligence, you would approve of not getting a fresh certificate by a fresh examination. Do you mean to say that is a general opinion amongst the miners, in a case where a Manager has lost it through negligence, not through incompetency? A No, a general opinion that way, (the Manager) should be competent. That is only my own personal opinion.

17634. Q I am putting to you the case where a Manager loses his certificate through negligence, you mean to say that he ought to get a fresh certificate if he merely loses his examination?

17635. Mr. Bruce: Perhaps, Mr. Lynght, it is hardly worth while to go into that question. The matter is dealt with very much in the way that the Court of Mines Inquiry deals with officers of vessels. There is generally no question of knowledge, theoretical knowledge, it is merely a question of want of moral judgment.

17636. Mr. Lynght: Q As a matter of fact you never expressed your own opinion? A Yes.

17637. Q Did you expect the presence of gas in this mine, from which you were removed, to the Chief Inspector? A Afterwards, yes.

17638. Q How long afterwards? A I reported this gas on the 20th March, 1891, and saw the Minister for Mines.

17639. At this stage Mr. Lynght desired to ask the witness a number of questions respecting the finding of gas in the Nymville Company's Coal Mine, whether the discovery of this gas was reported to the Chief Inspector of Coal Mines or not, and whether, if so reported, there was any neglect of duty on the part of the Chief Inspector.

17640. Mr. Bruce Smith objected to these questions being allowed, pointing out that two inquiries into the very matter had already been held, namely Mr. Wolfe, as a Royal Commissioner, and the other an inquiry held by Judge Fielding under the provisions of the Coal Mines Regulation Act.

17641. His Honor said that the matter which Mr. Lynght was desirous to go into was one on which the Commission had already decided that they would not go into it, it was really irrelevant, it had all been considered before. Mr. Lynght said that he was attempting to elicit that evidence because he proposed to show, later on, that where gas was reported at Mount Pleasant, no steps were taken by the Inspectors, though there were manifestly dangerous conditions there.

17642. Mr. Bruce Smith said that he had no objection to evidence being given about Mount Pleasant, but he did object to this Commission going into a matter which had been already twice inquired into and reported upon. He would have an objection to the reports of the two previous inquiries being in.

17643. His Honor said that this Commission could not be a Court of Appeal from the decisions made, in all other inquiries. If it were to become a sort of general Court of Common Law would seem right.

17644. Mr. Bruce Smith asked His Honor to see the reports of the previous two inquiries for himself. His Honor would then see that the question proposed to be raised by Mr. Lynght had been gone into.

17645. Mr. Lynght: I will not persist then.

17646. Q Mr. Bailey, do you know if it is a practice in your district to fail to report gas? A Yes.

17647. Mr. Bailey: In this case none only, Your Honor.

17648. Mr. Lynght: Q I am speaking of throughout your district, the district where you were living and your own particular one, for further consideration—do you know that it is a practice to fail to report gas? A I have that knowledge, the witnesses here on their oath, stated that gas was found, but not reported, many times in that district.

17649. Q Have you any other knowledge besides that? A Only personally.

17650. Q Are you waiting in a coal-mine now? A Yes.



Witness—J. W. Bailey, 22 February, 1903.

17081. Q Do the men there monthly report you if they find it? A I have not the means of knowing that without I see the report book.

17082. Q What are you doing now, cutting coal? A Yes.

17083. Q Are safety lamps used in that mine? A No.

17084. Q Do you know whether gas has been discovered in that mine? A Yes, I believe so.

17085. Q Where you ever discovered it? A No.

17086. Q Do you know that the men are afraid to report gas for fear of otherwise management?

17087. Mr. Bailey: I object to that. That is a general opinion.

17088. Mr. Bailey: He says he has never discovered gas in the mine where he is working, in point of fact; and I can hardly see how he can say that other men are afraid to report it, unless he has seen the opinion of the men in relation to the facts.

17089. Mr. Bailey: Q Do you know of any men who have discovered gas and have not reported it, in your mine? A I cannot ascertain from the report book, because I have not gone to look at it.

17090. Q But do you know of men having discovered gas and not reported it? A No, not that I know of.

17091. Mr. Bailey: I Mr. Bailey informed me just now that he could not get work, so he was boycotted, but he is at work.

17092. Mr. Bailey: Q You said that you were being boycotted? A Yes.

17093. Q Do you know of any letters hitting two men by any managers or officials to prevent you getting work?

17094. Mr. Bailey: I object to that question.

17095. Mr. Bailey: I wanted you, Mr. Bailey, to tell him about his being now in the position of a working man, when he says he is boycotted.

17096. Mr. Bailey: Q If you have got work, cutting coal, how do you explain your statement that you were prevented from getting work, cutting coal? A For the simple reason that the General Manager of the Company that I am at present working for—and I do not wish this statement to in any way reflect upon that gentleman—said, when a dispatch came word here, that if Bailey took any other in the Lodge he would have to go, so he (the General Manager) was the only one that would give him (Bailey) work in the district.

17097. Q What is the name of that General Manager? A Mr. Alexander Brown.

17098. Q There is a statement of Mr. Alexander Brown, that he is the only man in the district who would employ you, the only one whom you have got that you were boycotted? A No, I want to tell D. W. Robertson his work, and, in the very time that he would have my letter asking for it, his Manager was giving evidence as to the discharge of six men in the Arbitration Court, trying to show that he could not keep on the subject of coal because of the shortage of hands.

17099. Mr. Robertson: Q What do you say about that? A The Manager of the Helmsburgh Colliery was giving evidence as to the discharge of six men through not standing in their work at the time that they would receive no application by you for work. I concluded that he would be six men short, and that my application might be received favorably, seeing that he would be short of six men to man his colliery.

17100. Q And therefore he ought to have employed you, because he had discharged six men? A No, I do not say he ought to, but I think he should give me a chance.

17101. Mr. Bailey: Q Did you get any reply to your application? A Yes.

17102. Q What was the answer given? A This is the reply [reading from a paper]:—"In reply to your application for employment on the 11th instant, I regret that at present we have no vacancy at the Helmsburgh Colliery."

17103. Q There is nothing mentioned there about boycotting? A No.

17104. Q You have no reason to think that they had a message for you there? A Only by what appeared in the press.

17105. Q In addition to what Mr. Brown stated, which you have told us, do you know of anything so wrong to prevent you getting employment? A No, I am not aware of it.

17106. Q Do you know that your name was put upon the black list? A No, not for certain.

17107. Q Do you know whether there is a black list in your mining district? A Well, I believe it to be so.

17108. Q You said you did not know for certain whether your name was put there, have you reason to believe that your name was put down on the black list? A Yes.

17109. Q What reason have you for believing that? A Because of taking certain action against the Colliery Manager.

17110. Q But what reason have you to believe that your name was put on a black list—we know why it would be put there, but what makes you think it was put there, or do you know it was put there? A What makes me think it is there is because I cannot get work elsewhere.

17111. Q Has any Manager given you, or a reason for not employing you, that you had reported gas as a danger? A No.

17112. Q They have never given that reason? A No.

17113. Mr. Robertson: I may just as well say that my objection to Mr. Bailey is due to the fact that he did not report gas. If Mr. Bailey had reported gas, he would have been likely to meet with more success in my eyes, but he failed to report it. And so I could not be the evidence, it took him some time or some months, natural prayer before he could make a true report. That was my objection to him.

17114. Mr. Bailey: Q You have said that? A No.

17115. Q Mr. Robertson says his objection to you was not that you reported gas but that you did not report it for so many months? A I reported it weekly, something in the instructions received from the Manager, who is responsible under the Act.

17116. Mr. Robertson: Q Did you or did you not, in your evidence, say that you were six or seven months actually paying before you signed a report of gas having been found? A The gist of all my evidence was that I reported gas from the outset, according to the instructions I received from the management.

17117. Q Did you take six or seven months, or so many months' most painful labor you could make a written report? A Yes.

17118. Mr. Robertson: Well, that is my objection to you, Mr. Bailey.

17119. Mr. Bailey: Perhaps you might tell him, Mr. Bailey, what those instructions were which he says he received from the management.



- 17139 Mr. [Sergeant] Q. You know that the undersigned you to report it in a book did not you? A. Yes, I know that George [Sergeant] told me to report it in a book, but I did not report it.
- 17140 Q. What was the Manager told you that made you not to report it?
- 17141 Mr. [Sergeant] I told him. There is no evidence at all about that.
- 17142 Q. [Sergeant] He says the Manager gave him certain verbal instructions.
- 17143 Q. I want to know what was it that the Manager told you that made you not to report it in the book?
- 17144 A. He told me that I would be doing so only to the Company by reporting a reliable in his.
- 17145 Mr. [Sergeant] I believe, Your Honor, that he all came out in the other way. We are drinking back into it.
- 17146 Q. [Sergeant] That is so.
- 17147 Mr. [Sergeant] As far as I am personally concerned, I was anxious that Mr. Bailey should know that, as far as I was concerned, representing the Mines' Union, I gave him some opportunity here that I could. I would not like Mr. Bailey to report in the Newsweek because that I did not get for him away especially that I could get for him.
- 17148 Q. Is it still true to what the Manager told you, that you would be doing your duty to the undersigned by reporting a reliable, did he tell you anything about it? A. Yes.
- 17149 Mr. [Sergeant] I think we had better stop here.
- 17150 Q. [Sergeant] You might tell me what you think of the ventilation for a working place? A. I would consider it efficient ventilation when 100 cubic feet is being received at the face by every workman per minute when it is concentrated into the working place in this quantity.
- 17151 Q. Do you know that that is not being done now in every place? A. Yes, I have reason to believe that the 100 cubic feet are not passing according to the Act.
- 17152 Mr. [Sergeant] You might follow that a little further, Mr. [Sergeant], and tell him what his reasons are for believing that.
- 17153 Mr. [Sergeant] Certainly.
- 17154 Q. What reason have you for stating that the 100 cubic feet of air is not being done in the working place? A. I have this reason, first, which is why it may be passing in the heading, it is not passing at the face of the hole where the men are working.
- 17155 Mr. [Sergeant] That is not a reason.
- 17156 Mr. [Sergeant] Q. Do you know of cases where that has happened? A. Yes.
- 17157 Q. Recently? A. No, not recently.
- 17158 Q. In what concern? A. It was not passing at a certain time in the Newcastle Coal Company's Colliery.
- 17159 Q. At the time that you were a deputy, was that so? A. Yes.
- 17160 Q. Since that time, do you know of any case where the 100 cubic feet of air per minute have not been passed in the working place? A. I do not think that it is passing in the mine that I am at present working in.
- 17161 Mr. [Sergeant] He is asked does he know, and he says that he does not think.
- 17162 Mr. [Sergeant] A. Now, say, Mr. [Sergeant], going on here, say, "I know," or "I think," or "I believe." A. He says, "I believe," he can be once satisfied as to the ground of his belief.
- 17163 Mr. [Sergeant] Q. You say that, in your own mind, you think it is not passing; do you mean that your place is not from time to time? A. As there is no but.
- 17164 Q. Have you complained of the want of ventilation in your own mine? A. No.
- 17165 Q. If you are of the opinion that 100 cubic feet of air are not passing in your mine, why do you not complain? A. I dare not, I should be out of work then.
- 17166 Q. Is not the colliery that you are at present working in the only colliery that you have been able to get a start in some year because of a deputy? A. Yes.
- 17167 Q. And about how many collieries have you tried to get work at since your dismissal, and failed? A. About a dozen, some of them later.
- 17168 Q. What do you mean by saying that the ventilation of the mine should be continuous? A. I mean that, when the ventilation of a mine depends on a single man, it cannot be continuous in certain districts.
- 17169 Q. Why? A. Because it depends on a single man, and he is in the power by a master way.
- 17170 Q. That is, you say, you are of opinion that a system of ventilating mines with single doors is a dangerous system? A. Certainly.
- 17171 Q. In what respect do you consider the ventilation of mines is inadequate? A. It is in my mind inadequate because it is so much more than a quantity is incorrectly measured. I do not think that quantities will work out according to the measurements.
- 17172 Q. Is what reason is it incorrectly measured? A. When an anemometer is only used at the center of an airway, say 6 ft x 7 ft, it is shown that there is more velocity in the center of that airway than there is at the sides, bottom, and top, and there is no adequate result.
- 17173 Q. That is your opinion, the register of the air should be taken, not only in the center, but at the sides, and the bottom, and the top, to get a true result? A. Yes.
- 17174 Q. I think you suggested that the system of inspection was not as it should be? A. Yes.
- 17175 Q. Do you think the Government inspection is the Deputy's inspection, or what? A. I mean that the Government inspection is not efficient.
- 17176 Q. In what respect is it inefficient? A. For all the time that the bad ventilation was proved to exist in the collieries where I worked, and the gas was proved to exist, the inspection would say the Act was complied with, while I proved otherwise.
- 17177 Q. Have you anything else to say why the Government inspection is inefficient? A. No.
- 17178 Q. That is the only reason you give. What system of inspection would more generally be your opinion? A. The independent inspection district.
- 17179 Q. With the exception of your own case, do you know of any other person being reported for having reported things? A. No.
- 17180 Q. You spoke about a copy of the undersigned deputy's report being placed on the board; do you know of any instance when a report has been made by an undersigned deputy, and a different report put on the board? A. Yes.



12141. Q Was that a case where the examining deputy reported a danger? A Did you say besides my own case?
12142. Q Yes, having put your own case? A No, I do not know of any.
12143. Mr. Hinton. Q What does he mean by "putting a report on the board"? I am not aware of any practice of reporting other men than in a book. Ask him to explain it.
12144. Mr. Sample. Q In the southern district, as far as I know, nothing is put on a board regarding the examining deputy's report. Is it the practice in the southern district to have a board on which the examining deputy's report is announced? A The practice in the Newcastle District is for a board to be put up at the entrance of the mine, and the names to each district. It will have the date, and the word "safe" or "unsafe," so it, and the examining deputy's signature.
12145. Q That is a board up in addition to what is required by the Act, do you suggest that, though in the whole South a board should be kept outside each district, and that, on that board, there should be written the words of the examining deputy's report? A Yes.
12146. Q Do not you see, Mr. Hinton, that his report might run into about thirty or forty lines? A No, for the simple reason that there is not that space left in the report book.
12147. Q Do I understand that you only suggest a report on the board when the deputy desires something dangerous? A No, I still stick to my original idea.
12148. Q That the whole report should be there? A Yes.
12149. Q That is a suggestion for the introduction of a new provision in the Coal Mines Act? A Yes.
12150. Mr. J. Edgar Hinton. Q Now, Mr. Sample, just might ask him whether he knows of any case where there was a "safe" or "unsafe" was not substantiated in the reports.
12151. Mr. Sample. Q Do you know of any case where the board report was not in accordance with the report in the book? A I do not know of any case, but this is sufficient to prove me that your other year as the working of a mine you will see the word "safe" put in, and your other year something may occur during that period of time to make it unsafe.
12152. Q Just then the word "safe" is also put in the book? A Yes.
12153. Q So that the next lot of having it reported on the board does not make any difference? A No.
12154. Q So that your suggestion is that they do not report, even in the book, things that were in there on account of the number of accidents that do occur? A Yes.
12155. Mr. Hinton. Q He did not say "on account of the number of accidents that do occur." He said there must be in the course of years, be something to make it unsafe.
12156. Mr. Sample. Q Yes, whatever it may be.
12157. Q That the fact of its being reported safe in the book, if you have your suggestion in force, would only result in having reported safe on the board, so that you would not get into the bother to report properly? A No; but if that were done it would be an additional means of safety to workers.
12158. The witness is returned to the old exchange books, and you go into the old writing books; whereas, the witness says reported on the board they would not do such a thing.
12159. Q You anticipate that dangers may exist which men would avoid if they had notice of it every morning? A Yes.
12160. Q And you say, further, that the men either do not avoid themselves of the right to inspect the book, or are afraid to read themselves of that right? A Yes, I say that they are afraid.
12161. Q But if it was recorded publicly on the board it would be apparent to them, without their taking any chance at all? A Yes.
12162. Q Mr. Hinton spoke to you about men being able to enforce their right to use those books—do you know of any case where the management have refused the right of a man to use the book, or have placed obstacles in his way? A Yes, but recently a man said he was prepared to do so and so, but, to show the others how that was done in their mode of dismissal, I challenged him to go and look at the report book, and he dare not do it.
12163. Q You are a man who is challenged a man to go and look at the report book, and he was afraid to do so? A Yes.
12164. Q But you do not know of any individual case where the management refused to let a man use the book? A No.
12165. Q Or where the management put an obstacle in the way of providing men from using the book, because, if you do know of such a case, I will be glad to be told of it. A I think that, where the books are put in as one of the very places, besides as it were, it is an obstacle in the way.
12166. Q Tell me what other way places the books are put in? A In a trap out of the road, with a book and a door at it with a sliding door—the report book is in that place.
12167. Q What is that called? A That is called the company's cabin.
12168. Q Yes, speaking now of the mine you are working in? A No, I was referring then to the Newcastle Coal Company Mine.
12169. Q That is where you yourself kept the book? A Yes.
12170. Q And you put the book out of the way, so that the workmen could not read it? A It was the custom to place the book in that place.
12171. Q Was that a convenient place to keep it? A Not convenient for the workmen.
12172. Mr. Hinton. Q Was the door of the cabin locked, or the door which that book is?
12173. Mr. Sample. Q Was the place where the book was kept locked? A No, it was not locked.
12174. Q Would men have to get your permission to go and get that book to look at? A No, but they would have to have good reasons.
12175. Q To read it? A Yes.
12176. Mr. Hinton. Q How many years ago is this?
12177. Mr. Sample. Q How many years is it since you were at that colliery where you were dismissed about 7 or 8 years?
12178. Q Where is the book kept in the colliery you are at present working in? A In a desk inside the company's cabin.
12179. Q Is that desk kept locked? A I cannot say.
12180. Mr. Hinton. Q What is the name of this colliery?
12181. Mr. Sample. Q What is the name of the colliery where you work? A New Linton.



17291 Q Do you suggest that the deputy's report book should be kept at my post, the place in the mine, so that the witnesses can see it, remove it if I like, and suggest when it is removed that there is no necessity for that?

17292 Q Assuming that not for the present, in the afternoon, that the suggestion perhaps, may not be carried out by the Legislature, would you like to suggest any particular place where the deputy's report book should be kept? A Yes, I would suggest outside the deputy's office altogether, hanging up by the outside, where all men must pass.

17293 Q Then, when the witness first suggested it, in a large and well-rehearsed manner, with a list of the deliberations of all these Judges very easily look out? A Yes.

17294 Q You know that to be a list? A Yes.

17295 Q And you say that men, even in a Lodge, might hesitate to bring it up, because they would be thought easily swayed afterwards? A Yes.

17296 Mr. Alderson. I can say that I have never done any way.

17297 Mr. Agnew. I can quite appreciate that they would not venture to bring them in personally.

17298 Mr. Alderson. Personally, I think that deliberations are important—On the other hand, it is nothing to me. I have never found out anything yet.

17299 Mr. Alderson. Perhaps there is more necessity for secrecy on the work than on the work.

17300 Mr. Agnew. But, Mr. Alderson, this is introducing an element into this matter that had better be excluded.

17301 Mr. Alderson. We have not gone much into it.

17302 At this stage Mr. Bruce Smith drew the attention of the Commission to the fact that, although he had been asked by the Commission, and had undertaken to examine the witnesses in chief, Mr. Loughton, when the witnesses had finished their paper, seemed to be fully informed of the names of the witnesses the witnesses was in, and the examination in chief would, more appropriately, have been conducted by him. In fact, if he found that proofs of the evidence of witnesses called by the Commission had been supplied to Mr. Loughton, he would desire to examine them in chief.

17303 Mr. Loughton said that the witnesses had merely brought him in, upon Oath, before the eyes of the Commission, a paper, which was apparently merely a copy of the letter submitted to the Commission, upon which Mr. Bruce Smith had based his examination in chief. Mr. Loughton had no other information as to the evidence to be given by the witnesses, and was merely using the paper given to him for the purpose of his own examination.

17304 Mr. Agnew. Q You suggest that the examining deputy should be separate to the deputy?

A Yes.

17305 Q Did you mean to suggest that he might have an opinion concerning a danger which might differ from the opinion of the day deputy, and that, therefore, he should have the right to refuse that opinion? A Yes, he actually would have.

17306 Q He might see conditions dangerous which the day deputy might not regard as dangerous?

A Certainly.

17307 Q And, therefore, he should have the right to refuse the removal of the conditions? A Yes.

17308 Q Is that all you want to suggest on that? A Yes.

17309 Q Do you know whether, in your mine, when you are working places not being worked are worked? A Not directly considered—no, I do not think that they are, considered, only by what may go on in practice, and from the same body.

17310 Q Do I understand then that the progress has grown up of not ventilating the places that are not actually working? A They are not ventilated.

17311 Q Do you know whether the openings on to the shaft in your mine are merely blocked up with stoppings, or are they left open in a position? A In the mine where I am working at present there are no shafts.

17312 Q In the mine where you have worked, was it the practice to block up the entrances into the shaft with stoppings? A No.

17313 Q Then, do you suggest that an engine winding should be allowed to pass a shaft, and thereby perhaps carry on from under to the shaft? A Oh, dear, no.

17314 Q I understand you suggested that the water should be controlled by an engine winding? A A shaft of the engine, only for that purpose.

17315 Mr. Alderson. You mean that that area should be taken into consideration in relation to the whole mine?

17316 Mr. Alderson. Just the same as a working shaft.

17317 Mr. Agnew. Q You were asked by one of the Commissioners whether this serious accident at Elizabeth Pit was a creep or not? A Yes.

17318 Q Do you know the size of the pillars that were there when the fall took place? A They were supposed to be 5 yards, but in that case they were reduced, and the fall struck and cut to the surface, so that the pillars were much in place.

17319 Q Were they 5 yards square? A Right yards by 30.

17320 Q Got through every 30 yards? A Yes.

17321 Q What do you mean by saying that the pillars were reduced, and thereby weakened? A It was the custom at that time for the shaftmen to fill the holes and cut 5 ft from the sides of these pillars, and to make a few shallops, and so the pillars were weakened.

17322 Q That is to say, the shaft was filled as much as they could, and thereby weakened the pillars, is that what you mean? A Yes.

17323 Q In your opinion, should the air be cut through in every 30 yards? A Yes.

17324 Q And not further? A Not further.

17325 Q And, in your opinion, would the having of the air through every 30 yards, at all, mitigate the necessity of the roof, or tend to bring it on a creep? A Not in the least.

17326 Q You spoke about making the Manager sensible of his responsibilities, and not giving the Inspector power to order to safety. Can you tell me that in some of the difficulties in the Newcastle district there is a General Manager over there or there other other Managers, who are called the Managers of the mines? A I do not know of any one where there is a General Manager over there or there, but usually the mine is a General Manager over the Manager, and that Manager may have two others under him.







17116. Mr. Stevenson: Q Did Mr. Brown tell you direct? A It was stated openly in the Lodge that the men wanted to make me, on one occasion, chairman, and, on another occasion, check master, and on both occasions the Secretary of the Union Lodge rose and rebuked the Lodge publicly of the statement Mr. Brown had made, and that was where I first heard it, and consequently I had to decline the office that they wanted to put me in, because of Mr. Brown's statement.

17117. Q All right, the men who offered you employment after you had been rebuked elsewhere is the men that you make a charge against? You make a charge against the gentlemen who were generous enough to give you employment when you could not obtain employment elsewhere? A Certainly, I sincerely thank Mr. Brown for the offer and the chance of work, when others would not give it to me, but still I do not think, as a British subject, my liberty makes the men should be rebuked.

17118. Q Do not say it should. Now, you and you were about to read the report looked at. Yes.

17119. Q And other men were afraid? A Yes.

17120. Q You are not afraid to come here, though, and say the contents of that man was not so it ought to be? A Which man?

17121. Q The man you are working in? A I have not working desperately of the mine, with the exception that it is more sure, the air might be somewhat hot.

17122. Q But, still, you say that, and you are not afraid apparently? A No. I am speaking the truth when I say this.

17123. Q Well, then, is there any truth in the statement you make that you are afraid to read the report back? A Yes.

17124. Q How are there two statements consistent? You came here, and apparently you are not afraid—you say you are not afraid? A I am afraid to say that I may even influence Mr. Brown's mind not to let me continue work, but certainly I think my coming here is a step in the direction of my shamefully shunning justice in my own case, and getting this report cleared, so that I can at least take up the study of mining which I have neglected these years.

17125. Q The two statements seem to me utterly inconsistent. I should think that my statement you make here must carry very much more weight, and be a matter of very much greater importance to the Board, than the mere record of a book at the mine, that you are entitled to look at? A I do not see that, because, Q Do you think that Mr. Brown would attach a great deal more importance to what you say here? A Then Mr. Brown must be mixed with the same fault as I am, that I am ignorant throughout the district.

17126. Q Coming to the matter of safety lamps, you would leave the question of using safety lamps to a vote in the discretion of the Managers? A Yes.

17127. Q When made to understand his responsibilities? A Yes.

17128. Q But, supposing the Manager does not feel his responsibilities, what would happen then? A Well, accidents or disasters are liable to happen when a man does not feel his responsibilities and enforce the Act.

17129. Q I quite agree with you; but then to prevent these accidents, what would you do if the Manager was not afraid with his responsibilities? A As long as he complies with the Act he would be safe.

17130. Q But do not you take it that it is not complying with the Act, if safety lamps should be used and are not used? [Witness did not answer.]

17131. Q Is it complying with the Act if safety lamps should be used, and they are not used because a Manager does not fully realize his responsibilities? A A Manager, when he sees or suspects personally the mine, will become acquainted with it, and he will then know when to enforce safety lamps into that mine.

17132. Q Well, supposing he knows, and does not do it? A If he knows the fact that dangers exist, and he does not take sufficient precaution, a disaster is likely to happen that he may be punished by.

17133. Q Yes, but that is looking the other side of the shield instead? A I cannot understand a Manager not feeling his responsibility.

17134. Q I put it to you now, if there should be used in the opinion, so will say, of the Inspector, and the Manager, either because he does not know, or does not feel, his responsibility, refuse to put in safety-lamps? A Then he takes the responsibility.

17135. Q Yes, but other people have to take the responsibility too—if you were working in that mine you might be blown up? A Well, if I saw that danger existed, and the Manager did not endeavor to comply with a certain amount of safety, I should certainly try to get out of there as soon as I can.

17136. Q Do not you think there ought to be some appeal in a case such as that, where a Manager does not use the necessary for safety-lamps? A A practical, straightforward, honest Manager, who feels his responsibility, is the best judge as to when safety lamps should be used in a mine.

17137. Q No doubt, but, supposing he is not practical, and not honest, and not straightforward, and does not feel his responsibility, should there not be some appeal from his judgment? A Well, we expect a Manager to be reasonably competent, and, if the severe certificates are dispensed with, we ought to have competent Managers who will take the responsibility.

#### Examination by Mr. Ritchie —

17138. Q Do you believe that all the persons who are acting as Managers at the present time fully realize their responsibilities, and are honest and straightforward? A No, I do not think so.

17139. Q Then, holding the opinion that they are not so, do you think that they ought to be ousted with the sole power of determining whether lamps should go on or not? A I think that the Managers who hold severe certificates should have their certificates cancelled. I believe that a competent Manager, by experience, field and knows his responsibility with regard to the safety of his men.

17140. Q You have got greater confidence in the persons who hold certificates of competency? A Yes.

17141. Q But do you hold the opinion that, because they have got certificates of competency, they would fully realize their responsibility, and be more straightforward and honest than other Managers? A Certainly, because we know they possess the knowledge to pass an examination, and we know, probably, that they are practical men too—with the examination will depend upon that.

17142. Q I suppose you will admit, though, that, were we to add these qualifications, they might not in their judgment? A Yes.



17304 Q I suppose you know, also, that there is a certain amount of expenditure incurred in the installation of safety lamps—expenditure by the mine-owners? A Yes.

17305 Q Probably you also know that Managers are somewhat hesitant about incurring any fresh expenditure if they can stand it? A Just so.

17306 Q And that, although the Manager may naturally believe that safety lamps may be necessary, even a Manager who holds a certain kind of conspiracy may be afraid to put them in, for fear of increasing the risk of working the colliery? A Yes, that certainly will have something to say regarding the introduction of safety lamps.

17307 Q Having a knowledge of these facts, do not you think that the Inspector of Collieries should be a person equally competent with the Manager to determine whether safety lamps are necessary or not? A Well, they have not done so, looking at it in the light of the *Kendal* explosion.

17308 Q But I am just putting it to you now, do you not think that they ought to be equally so responsive to the Manager? A Yes, equally so, I think.

17309 Q And do you not think that, after all, it would be wiser to leave the safety and safe control of this important matter in the hands of one single man, and that the Manager? A I do not think that it is for the Government to say where safety lamps shall be used, but rather the Manager.

17310 Q Supposing the owners of a colliery were to say that, from their knowledge of a mine, in their opinion safety lamps ought to be used, would you then leave it to the Manager to say whether they shall or shall not be used? A Well, if the Inspector for the District is called upon for a report, and he advises the use of safety lamps, that would give a good way towards the introduction of them into that mine, even against the Manager's opposition.

17311 Q But then, under your proposal, regarding the Manager, was there to face with a new report, he would still have the right to say? No, they shall not go in? A Yes.

17312 Q Do you know of any colliery where the workings themselves have asked for the lamps to be placed on their own safety, but where the Manager has refused to put them in? A I know of a colliery where the miners have asked for the safety lamps to be taken out of the mine and the Manager has refused.

17313 Q What is being asked about when the witnesses showed that the Manager should put the safety lamps in for their own safety? A Yes, I believe that there are some mines that are South Wales where that has happened.

17314 Q Have you any knowledge of that yourself? A No.

17315 Q Do you signed the minutes in regard to judge when safety lamps should be introduced? A Yes.

17316 Q Would you, then, give them credit for sufficient knowledge to know when safety lamps ought to be used? A Yes.

17317 Q If you were aware of the fact that the miners had reported the use of safety lamps in a colliery, and the Manager had refused, would you still hold that opinion, that the Manager ought to be the sole person to determine that matter? A Seeing that he is the responsible person, yes.

17318 Q Do not you think that the miners have a great responsibility, when they go into a mine with naked lights, when they believe that safety lamps ought to be used? A The Manager has the most responsibility.

17319 Q Do you believe that the miners, when they go into a mine, should place their lives on the hands of a person who, perhaps, may, for the reasons which I have stated, refuse to relinquish their lives? A That is left to their own judgment, as to the danger or safety of that particular mine.

17320 Q But you do not want to leave it to their judgment, unless you want them to do what you had to do, to walk about looking for work elsewhere? You do not mean that, surely? A I certainly should not continue to work at a place that I thought was too dangerous.

17321 Q Would not you think, as a practical man, with a knowledge of the danger, that your voice ought to be heard? A Oh, yes, attention ought to be paid to all considerations from practical men.

17322 Q How long have you acted altogether as a deputy in any colliery? A About twelve months.

17323 Q During that period was it part of your duty to examine the waste workings? A No.

17324 Q That was not part of your duty? A No.

17325 Q Were those separate persons at the colliery where you were deputy who had that duty to perform? A Not to my knowledge.

17326 Q Did I understand you to say that there was no person whose duty it was to examine waste workings at the colliery where you were a deputy? A Not to my knowledge.

17327 Q Were there any reasons as to your knowledge? A Not specially. If they were examined, it was, perhaps, already, for one, perhaps, it was inherent in the fact that way to reach a certain place, and a person might put out his own man. If you would know that an examination that might be done.

17328 Q So that, for as you know, the only reason which that was made of the waste workings within you were a deputy was in taking a short cut to reach some other section of the mine? A Yes.

17329 Q And the deputy coming in and reveal should have as he revealed? A Yes.

17330 Q Would you regard that as an examination? A No.

17331 Q That was at the A. A. pit? A No, Newcastle Coal Company's.

17332 Q Do you know if there is any examination of the waste workings when you are working now? A No, I do not know of any, and I believe that they would be passed there unexamined.

17333 Q You do not know of any examination being made, but you believe that somebody may travel through occasionally—not for the purpose of examining, I believe? A No.

17334 Q Is that the general practice in the North, where you have worked? A It is the general practice in the mine that I have worked in.

17335 Q Did you ever suggest it as part of the man's work to be done while you were a deputy—the examination of the waste workings? A Yes, it should be done if the men had time to do it, but he had not time to do that.

17336 Q I suppose, with your practical and theoretical knowledge, you do regard this, the examination of the waste workings as a very necessary part of the examination of the colliery? A The waste workings should be examined, if left open, but I certainly object to any waste workings—[here repeated]

17337 Q I would show the mine, I suppose you think that there are sections of the mine which are sections of the mine, but may not properly be regarded as waste workings? A Yes.

17338 Q Was that class of workings examined while you were a deputy? A They could not be examined.

17339.



17329 Q Why? A. In almost all workings a breaking might be fallen, or an extreme in an old head might be fallen, and no person or deputy could get on the wheel side consequently, what was on the old head could not be held by assistants.

17330 Q But I suppose there are times when there are parts of the works abandoned which have got fallen at all? A Yes.

17331 Q Which you were depert, when such workings as those caused by you? A No.

17332 Q Were they caused by accident? A Yes to my knowledge.

17333 Q Would you regard the maximum part of the work to be extremely effective and satisfactory from a safety point of view, with those workings left unattended? A No.

17334 Q So be it as you have, is that the general practice? A So far as I know.

17335 Q Do you know if there was anything in your Special Rules providing for weekly or monthly examinations of waste workings? A I do not know that there is anything. I have a copy of the Special Rules here.

17336 Q I take it I am quite clear upon the point that you say that, at no period, neither weekly nor monthly, were examinations made of waste workings? A That is.

17337 Q I have got that quite clearly? A Yes.

17338 Q I think you have said something about the Managers as regard to the responsibility, that if they made a general examination of the refinery they would be the most competent persons to know whether safety lamps should be used or not. Now, what is the practice, so far as you know, of Managers making general examinations of the underground workings? A The practice was in the refiners that I have worked in sometimes a month, or in a month or may elapse before the Manager is seen; in other cases it may be done every week.

17339 Q A month or two might elapse between one visit and another from a Manager at some collieries; and in other cases the Manager might be down once a week? A Yes.

17340 Q And, with the knowledge which you have gained, by observing the practice, do you think that a person who goes down to frequently would be competent to know when safety lamps were required? A No, I think the Managers, when he knows his responsibility, will go down once a day.

17341 Q Then the practice which you have mentioned to me the practice of persons who do not realize their responsibilities? A Yes.

17342 Q And that appears to be the general practice? A Yes.

17343 Q So that, generally, the Managers do not appear to realize their responsibility? A At present.

17344 A. Yes. That is a condition arrived at from his experience in one mine.

17345 Mr. Street Smith. It is a condition, rather, of the Commissioners than of the witness, because it is put to him, and he puts his hand.

17346 Mr. Smith. So how he says. He added his name to what he had previously said. He said he thought they should go down once a day.

17347 A. Yes, I think that they are a series of deductions of one thing from another, with a good deal of logic about them, but I say they are not the witness's. I do not think he would have framed those deductions in his own mind.

17348 Mr. Smith. The witness is a practical man with twenty-eight years' experience, he has a certain knowledge of things, and he has a sound sense of the responsibility, and he cannot think that a man with such experience as that will not be careful in ascertaining which he does not think or know.

17349 Q How often do the Inspectors usually reach the refiners at which you have been working, so far as you know? A It may be once in three months, and on occasion it may be longer than that.

17350 Q While you were a deputy, I suppose you came in contact with them frequently? A No, I was situated in a peculiar circumstance, generally when Inspectors were expected, work for me was found in an available way place.

17351 Q Where the Inspectors were coming they found work for you in an out-of-the-way place? A Exactly.

17352 Q Did you ever know the Inspectors to go into the waste workings? A No.

17353 Q Did you ever hear of the Inspectors going into the waste workings while you were there? A No.

17354 Q Do you think the Inspectors' reports ought to be open to the workmen—the Government Inspector's reports? A Yes, I do not see any reason why they should not be.

17355 Q Do you know of any reason why they should not be put on the board as well as the other reports? Do you know of any reason why they should not be made as public as the deputy's reports? A No.

Examination by Mr. Tinkerton—

17356 Q How many collieries have you worked at in these collieries? A I have worked at five.

17357 Q What collieries were they? A I have worked at the A and A Company, and the Darwood Company.

17358 Q How many years at the A and A Company? A Somewhere about two, I think.

17359 Q How many years at the Darwood? A About eighteen months or two years. Then I think the total amount at the Darwood Company collieries would be about eight years.

17360 Q Do you say that a month or two might elapse before the Managers of these collieries were down upon the mine—that the Manager only was down once a month or once in two months? A Yes.

17361 Q Do you give it six months? A Yes, in the time that I worked at these mines.

17362 Q How was your (month only) visit—yes, I suppose, were working in the mine, and the Manager might go underground without your knowledge? A Yes, but it was not known generally, on the mine, when the Manager was down.

17363 Q Then you say that you are in a position to know that the Managers of these mines, A and A Company, Darwood Company, and Newcastle, only descended once in a month or two months? A Well, on occasion it may be less. I am speaking approximately.

17364 Q You have put it down in your evidence previously? A Yes, but of course you know of Manager may have occasion to go down to look into some special accident that has occurred—that would break the month. In other words a month would elapse, and yet not break the month.

17365 Q I should think he would have some reason to go underground in that time. Then you do not wait to quickly state a statement in any way? A Only in that respect, that in case of a break down something like that—[interrupted].

17366.



Witness—J. W. Seale, 42 February, 1880.

- 17476 Q Then, according to you, it is only a sort of accidental circumstance altogether that takes a Manager into the mine? A No, I do not say that.
- 17477 Q Well, I refer then. It is only once in a month or two, it must be only some accidental circumstance that takes him down. I think at the beginning of your evidence you made some sweeping assertions that gas was not reported at the mine in the State? A Was not reported at mines in this State.
- 17478 Q Do you refer to any one particular mine, or has this a general application? A Well, it is a general statement now, but Mr. Seaton, a mining Manager, said he would not swear that many instances of knowing, even, occurred in the Newcastle district, and Mr. Thompson said—[Interrogated.]
- 17479 Q Stop a minute. You were I am glad to recollect of what you know, now, I ask you, do you know that gas was reported in the mine previously, or is it a particular mine that you refer to? A No, it is a sweeping, general statement, the knowledge of the mine and the report book.
- 17480 Q Was this sweeping and general statement that you made that gas is not reported at mines in the Colony, or do not you think he is unjust and aggressive? A I was simply repeating the words of Mr. Thompson to Judge Fitzhugh.
- 17481 Q I am asking you of your own knowledge: you come here to say what you know about matters affecting mines, and you state that you know that gas is not reported at mines in the Colony. Now, I ask you, do you know that yourself? A Yes, in my own case.
- 17482 Q Do you derive your knowledge down to your own case? A I know of no one outside my own case.
- 17483 Q Why do you say that gas is not reported at other collieries? A I do not think I have said that.
- 17484 Q You have said so. You made a very sweeping assertion that you knew that gas was not reported? A Yes, well, that has been proved, to my mind, both in the Mount Kenton and Dudley districts, that this gas was not reported.
- 17485 Q But you made a general statement, and now gather, from what you say, that that is the position in mines generally? A If you take two instances where districts have brought these things to light you infer that it is not done at the other collieries.
- 17486 Q Two instances are sufficient to your mind to prove that thousands tell either truth or a very great deal of lies? A Small ones.
- 17487 Q You have said so now? A None of them.
- 17488 Q If the gas is not reported, they must be negligent, must they not? A Well, you see what evidence has been brought out here that men have reported gas, and we have no knowledge of it in the report books, and the inspectors do not know of it.
- 17489 Q Yes, we have knowledge that men know of gas and did not report it? A Yes.
- 17490 Q Mr. Seaton? I think the knowledge is that they do not report it in the districts.
- 17491 A Mr. Seaton? I am not defending anyone. That is so, but we have knowledge also that men know of gas and did not report it.
- 17492 Q Mr. Seaton? I have an enormous amount of evidence in the Commission from men who say that they know of gas and did not report it.
- 17493 A Yes, Seaton. And there is evidence that reports were made.
- 17494 A Mr. Seaton? I do not deny that, but I say there has been abundant evidence before this inquiry that men have known of the existence of gas and have not reported it. Of course, some other men say they have mentioned the finding of gas to the Manager, undoubtedly, but we have not heard the evidence yet.
- 17495 A Example? There is a considerable amount of evidence that men working at Kenton reported too many to three or four different deputies and to the Manager.
- 17496 A Mr. Seaton? I do not wish it to be thought for a moment that I am defending any official, on the contrary, I think my official who knows of the presence of gas, and does not report it, is guilty of negligence, and ought to be severely punished.

Re-examination by Mr. Bruce Smith—

- 17497 Q You made a general statement a few weeks ago to the effect that the Manager in the northern district did not go into the mine in every case, in order to see a month? A No, none of the mines.
- 17498 Q Now, you narrow it down to some, will you state any one mine is reported to which you are prepared to swear that the Manager did not go in more often than once a month? A Yes, New Lambton.
- 17499 Q Is that the one you are in? A Yes.
- 17500 Q Who is the Manager there? A Mr. James Thomas.
- 17501 Q Is there any other that you will swear at present where you are prepared to swear that the Manager does not go in so often as once a month? A No, I cannot swear unless I work there.
- 17502 Q Do you swear of your own knowledge that the Manager of that mine has not been in once a month? A Of my own knowledge I have not seen him in the mine.
- 17503 Q Is that what your evidence amounts to—that you have not seen him? A Certainly.
- 17504 Q Will you swear he has not been in? A He may have been in when I have not been there; but I am speaking of the working days of the mine.
- 17505 Q Will you swear that he has not been in more than once a month, on the working days of the mine, without your seeing him? A I will swear that he has not been in my working place.
- 17506 Q Is that all you will swear? A Yes.
- 17507 Q Mr. Seaton, I heard Mr. Bailey make a statement that certain witnesses had given evidence before Judge Fitzhugh as to certain facts. Perhaps the Commission might think it advisable to have before them the reports that were made by the Judge or by the various Commissioners that were held. There may be a considerable mass of evidence in those inquiries that might support some of the recommendations from the Mines, and I respectfully submit that the Commission could consider it to a certain extent as though that evidence had been given before them on oath. I do not mean to adopt the evidence in the same way as the Commission departments have been adopted, but still to consider it.
- 17508 A Mr. Seaton? We will leave that an open question, as to whether we do or do not make use of those reports at present. We do not want to overlook the Commission.

[At 3 p.m. the Commission adjourned until 2 p.m.]

Adjourned



## Afternoon.

[On resuming at 2 p.m. Mr W. H. Frost attended to take shortened notes of the evidence and proceedings.]

THOMAS COULSON was sworn and examined as under:—

[This witness was called at his own request, and the Commission asked Mr Bruce Smith, as a matter of convenience, to conduct his examination in chief.]

Examination in chief by Mr Bruce Smith:—

17410 Q What is your name? A Thomas Coulson.

17411 Q You wish to give some evidence before the Commission with regard to real meeting, and you were asked to state the nature of the evidence which you wish to give? A Yes.

17412 Q And then you wrote a letter stating that you were entirely satisfied you should be asked to state the nature of your evidence, and you have not stated it? A I stated that it was in the black list in question.

17413 Q You have supplied some notes to Mr Lough, on the evidence which you wish to give with regard to the twenty recommendations which have been made by the union's lodge? A No sir.

17414 Q You have been with Mr Lough since the Lord adjourned? A I have been here.

17415 Q You have spoken to him about the evidence? A No, nothing at all in connection with my evidence.

17416 Q Have you not told him of the opinion which you have formed with regard to the twenty recommendations, as you were speaking about—have you written an opinion as to your evidence? A No, we never spoke about the recommendations; and I have written no notes upon my evidence.

17417 Q Now, however, if Mr Lough has any idea as to what evidence Mr Coulson is about to give, it might help his examination.

17418 A Lough? I protest against Mr Bruce Smith making any suggestion that I know anything of the evidence which Mr Coulson is likely to give.

17419 A Mr Bruce Smith? You said so this morning.

17420 A Lough? I said that Mr Coulson had asked me for a copy of the Union Recommendations, and that I sent him a copy, beyond that I said I have nothing about the witness, and was not prepared to undertake his examination.

17421 A Mr Bruce Smith? Q You have had three twenty recommendations sent to you, and you have probably thought them out and are prepared to give evidence with regard to them? A Yes.

17422 A Now? Q You have formed opinions on them? A Yes.

17423 A Mr Bruce Smith? Q Apart from those recommendations, will you state what other evidence you can give to the Commission? A Yes. The first thing which I wish to mention to you is about the black list; that is the principal thing. Gentlemen of the Royal Commission, and gentlemen: The evidence I mean here to give is in connection with the black list. I have heard it said that there is no work doing on a black list in the district. Unfortunately for me, I have had to suffer from it, but not severely.

17424 Q Tell us the circumstances connected with it? A At the end of the 1831 strike, I was then President of the Miners' Association in the southern district, and after the strike was declared all I tried to do was work.

17425 Q Which strike? A The 1831 strike—the machine strike. I tried to get work, with all the influence excepting Kemble. Then I came to Newcastle, and I happened to have a particular friend of mine there, and I got work.

17426 Q What position was your friend in? A He was underground manager—Mr Cooper. There came a time when I wished to better my position by going with a man to look for gold. We got leave from the underground manager to go down to the head Manager, Mr D. W. Robertson, but he was not at home.

We went away, and we were away three weeks. When I came back I saw the Manager, and I went to give me work, but he gave the other man work. I suppose I had said something in some way, but I do not know what I had said.

17427 Q You do not know why you were not taken on again? A I heard that I had said something at a dinner meeting.

17428 Q Have you any reason for supposing that the refusal to put you on was the result of something which you said in Sydney? I understood that you left your work and went away for three weeks? A I had permission to go away.

17429 Q Had you permission to return to your work? A Yes.

17430 Q You would have permission to come back? A Yes.

17431 Q The other man got back? A Yes.

17432 Q What did you do after that? A I can mention other people's names. There is the case of a man named Dryden, who got work at the Metropolitan Colliery. He was at Ball's making arrangements to help his family out, and he returned to his work, saying that they could not employ him, and that he need not shift.

17433 Q What did the telegram say? A "Caution employer you, do not receive." I am not sure of it.

17434 Q How long was Dryden working on the mine? A He was not working at all. He never got work.

17435 Q In which mine was that? A In the Metropolitan Colliery.

17436 Q Have you any reason for saying that that was in consequence of anything he had done? A I never knew him to do anything. I cannot say what he did.

17437 Q You cannot assign the occurrence to any action on his part. You know that people often intend to supply others in business, and find it difficult to do so. In others happens in the simplicity of conscience? A Sometimes it does.

17438 Q Does it not come often in business? A That is not a case of that kind.

17439 Q Have you any reason to say that the man had said anything to cause him to be refused? A I do not know what he said.

17440 Q You do not know that he said any thing to cause the single case of refusal? A I should a lot of things.

17441 Q Did he say those things before he was refused work? A Before he was refused work, if he did say them.

17442 Q In those other cases that you can mention, then, is within your own knowledge, in which a black list has been kept? A That is all I know of my own knowledge, but I have heard rumours of other cases.



Witness: E. Dwyer, 11 February, 1891

17141. Q. Hayden's case and your own case are matters of which you know personally? A. Yes.
17142. Q. Apart from the mining recommendations, is there anything else which you wish to say anything about? A. Yes, about the inspection of mines.
17143. Q. What about that? A. I hold the inspection of a mine would be better done, if done in any one month the three men are men appointed from the miners and one man representing the Company.
17144. Q. Is that capacity? A. The Company's representative—say the underground manager and the Government Inspector.
17145. Q. You say the underground manager, the Government Inspector and the clerk inspector—they should be three? A. Inspect the mine, and the report should be published.
17146. Q. Should they report it together or separately? A. Together.
17147. Q. And the report should be published? A. Yes, once in six months.
17148. Q. That is instead of having separate reports, not published? A. Yes, so that the men can see what the report is, and the public as well.
17149. Q. Is there anything more you can say with regard to inspection? A. There is one matter which I have not touched in the present Mining Act. We will suppose that a man is working singly at night, and he is met with some sort of an accident, there is no way of ascertaining whether that man is on the job or out of it. I have known men to be an hour late in coming on. If anything happened to a man, he might be there for 12 hours, and it might be the means of costing his death.
17150. Q. It has been suggested, I may tell you, that a man should be given to such men, that he should take the man in with him, and that he should bring it on a pug when he comes out, so that, by looking at the board, the mining officials will know what men are not out of the mine? A. It would not be reliable.
17151. Q. What would you suggest? A. I would suggest that some colliery should see that all the men are out.
17152. Q. How would you do that? A. They do it in the Old country.
17153. Q. How do they ascertain which men are out of the mine? A. The official in a particular district knows every man who comes out.
17154. Q. Who does it? A. The man in charge.
17155. Q. The manager of the mine having a watch, a token? A. They would be too careless with them.
17156. Q. Why, the men? A. Yes.
17157. Q. Have you no faith in the men giving witnesses in the matter? A. The men have got faith enough.
17158. Q. I am asking you if you have faith in the men. Could you rely on their bringing those tokens or the pug? A. You cannot judge men much. You must lay down the best rules you can to prevent loss of property and of life.
17159. Q. Do you not think that if a man were given a token, and he was required to bring it on a pug, that he would do it, and that it would be a guide to the officials of the mine as to what men were out of the mine, and what men it might be necessary to look for? A. I thought you meant that they must hang up the token at the pit top.
17160. Q. I mean at some office as they come out of the mine? A. Oh yes, that is right enough, to bring them out of the station.
17161. Q. Have you anything else. You have stated what you know about a Minister. You are you have given me no information, and I cannot ask you questions? A. There is another matter in connection with the matter of men from a mine. I think it would be a good idea. —[Interposed]
17162. Q. That is one of the recommendations upon which you will be concerned directly. Have you any more suggestions to make with regard to the amendment of the Mining Act? A. Not that I know of.

Continued by Mr. Lynglie—

17163. Q. You said that the man Dryden, whom you mentioned, had taken a prominent part in some affair? A. Yes, he had been a prominent union man ever since he came to the district.
17164. Q. You have taken a prominent part in union affairs yourself? A. Yes.
17165. Q. What you say about as to why you were refused employment? —
17166. Mr. Dwyer. A. The question is, what evidence has he?
17167. Mr. Dwyer. A. I think it is hardly legitimate for Mr. Lynglie to ask evidence. He may have an opinion on the matter, but no evidence.
17168. Mr. Lynglie. Q. Well, when did you get it? A. The Manager.
17169. Q. When did he say? A. We went to his house, and I said, "We did not succeed, Mr. Robertson, and we have come in to be work." He said, "Well, children, I think it had better stop as this." That was leaving me without work. I said, "Do not refuse the other men on account of my son, if I have got any." He said, "We can go to work."
17170. Q. Was any money given to you? A. I never asked for any money.
17171. Q. Is the case of Dryden, do you know why he was not employed? A. No.
17172. Q. Do you know if a provision in the Coal Mines Act, including the keeping of a black list, and forbidding the improper provision of men, getting employment in other collieries, would have a tendency to make men report anything which they saw as a colliery. Do you think that the men would report such a provision as a self-guard if they did report defects in the management? A. It would make them more secure. They would not report as they had before the 1st of May, if they reported anything.
17173. Q. You said that you had stated something at a meeting in Sydney? A. That is what I said.
17174. Q. What did you state? A. I spoke about the many accidents that had happened at the colliery.
17175. Q. At a particular colliery? A. Yes.
17176. Mr. Dwyer. A. At the particular one at which you were engaged? A. Yes.
17177. Mr. Lynglie. Q. At the same time? A. Yes.
17178. Q. Did you speak there about the management? A. It was not the fault of the management. It was the fault of the men, and of having new men on the work. It was a question of the coal falling on the men and breaking it in.
17179. Q. And you think, therefore, that, because of your statements, the Manager refused to employ you? A. I don't know the Manager—he said it was the Company. He wrote —

17180.



- 17492 Q What did he write? A He wrote a letter to the Secretary, and said that it was not he who wished to get rid of me, but the Company.
- 17493 Q Did you see the letter? A I saw the Secretary of the Miners' Union, and I also saw the letter.
- 17494 Mr. Barry Q Did you read it? A Yes.
- 17495 Mr. Lynam Q That letter was sent by Mr. Robertson? A I would not swear that now. It is six years ago. It came from the office. I would not swear that Mr. Robertson sent the letter.
- 17496 Q When you were released employment, did you bring the matter before the Miners' Union with a view of getting that letter sent? A No.
- 17497 Q Do you know why it was written? A The Secretary personally interviewed the Manager. It was not done officially by the miners. I told them not to bother about it; and I went away.
- 17498 Q You say that, in consequence of a personal interview by the Secretary, a letter was sent asking that it was not the Manager who objected to you, but the proprietors. Therefore, you are led to believe that you were released—
- 17499 Mr. Barry A He did not say that.
- 17500 Mr. Lynam Q Do you see that you were released?
- 17501 Mr. Barry A I object to that. He has never related to any such statement.
- 17502 Mr. Lynam Q It is not material. Did you think that it was your part to inform others that personal getting employment? A Yes.
- 17503 Mr. Barry Q What do you say about the black list? A That is what I take to be being ostracized.
- 17504 Mr. Lynam Q In the case of Dryden, do you know that he was for some years unable to get employment? A Yes, I know that he was for a long time unable to obtain employment.
- 17505 Q Do you know he tried at various collectors? A Yes.
- 17506 Q Now, speaking of these recommendations. I furnished you with a copy of them; but, before dealing with this matter, you might tell us what practical experience you have had of such a copy—how many years? A I have had about twenty years in this Colony. I was 25 years of age when I came here, and I was brought up in the mine.
- 17507 Q Taking the whole of the twenty recommendations together, without going into details like the present, do you, as a practical miner, approve of them, or do you take exception to any of them? A I take exception to the recommendations dealing with the limitation of the mine.
- 17508 Q You have explained that to Mr. Bruce Smith. Do you approve of the others? A I do not approve of the abolition of old workings. I think three places should be open, and should be restricted as far as practicable. They should not be closed up and left like that, because, when a big fall comes, any stoppage which would be put in would be taken out. If the place is restricted as far as practicable, and is situated at different times, I think that is the only thing wanted.
- 17509 Q With that exception, do you approve of the twenty recommendations? A With regard to the use of safety lamps is more, I think that the three persons whom I have suggested should go round and inspect the men once in every six months, should have the choice in power of saying whether safety lamps should be introduced into a mine or not.
- 17510 Q You would restrict the power of the ordering of safety lamps to the three persons you have mentioned—the Government Inspector, the underground manager, and the clerk-inspector? A Yes.
- 17511 Q Then, with this exception, do you approve of those twenty recommendations? [He answers.]
- 17512 Mr. Barry Q Would you say that any two out of those three persons should have the power of making such an order in the case of one disapproving? A Yes, any two of them, of course.
- 17513 Mr. Lynam Q I was asking, do you agree generally with these recommendations? A What I wish to explain is this. I consider that the report ought to be made public. That is a vital point in the mining industry. The men should be able to see the reports of the Inspector published from time to time, instead of its being put away in the office or somewhere else where you cannot see it. If a report about the mine is published every six months, the men and everybody else concerned with it would know what the place was.
- 17514 Q You are now referring to the report which you say should be published every six months. Do you also think that the Government Inspector's Report, when he visits the colliery, should be made available to the miners? A I consider that it ought to be.
- 17515 Q Following up that suggestion of yours, that any two out of two persons out of the three persons you mentioned should be binding as to the introduction of safety lamps do you not see that the men and the management might not wish for the introduction of such lamps but that the Government Inspector might, and then the decision of the representative of the miners and the representative of the management might override that of the Government Inspector, and then the mine might have to continue working under dangerous conditions? A They would be to blame then.
- 17516 Q No doubt; but the workers would be blown up in the meantime? A But the men would be taken of the Inspector.
- 17517 Q Would it not be better to put the power of ordering the lamps in the Government Inspector, rather than take a vote like that? A No, I consider not. I think three kinds are better than one.
- 17518 Mr. Barry Q In a case of disagreement it would not be three kinds. It would be two kinds balanced by one. It would come back in one kind probably. If two think one way, and one thinks another way, it is a balancing power of some kind.
- 17519 Mr. Lynam Q You would be able to get over that, if the reports published when the gas had been found, because then the Chief Inspector would have to go to the mine and examine it. He is the man who is supposed to have more brains than all the rest, and he would be able to govern the whole of the mine.
- 17520 Mr. Lynam Q Would you leave it to the Chief Inspector to decide whether or not the lamps should be introduced? A Why not leave it in the hands of the three persons?
- 17521 Q It is assumed that the District Inspector would refer the matter to the Chief Inspector, and then finally he would be the guiding mind? —
- 17522 Mr. Bruce Smith Q That is the first ruling of the recommendations that I have heard of in that way.
- 17523 Mr. Lynam Q It would really come to that. If there was a Chief Inspector and if the question arose, the District Inspector, if called upon to exercise such authority, would leave it to the hands of the Chief Inspector.



RECORD—T. Dublin, 17 February, 1905.

12513 *Mr. Bruce Smith* | Mr. Affonso mentioned the Chief Inspector, but Mr. Egan's name said, "He is the man we want."

12514 *Mr. Egan* | The words in the recommendation are "the Inspector."

12515 *Mr. Bruce* | It is a matter of fact. If there is a Chief Inspector, he would have the power of exceeding the decision of the sub-inspector.

12516 *Mr. Bruce Smith* | I do not think he would, under Mr. Costello's proposal.

12517 *Mr. Egan* | Suppose the local Inspector disagreed with the opinion of the miners' representatives and the miners' representatives would you take that opinion as final, or would you have the opinion of the local Inspector, supported by the Chief Inspector? A. If the local Inspector settled himself that there was danger, he would call the attention of the Chief Inspector to it, and he would go there and see.

12518 *Q* Would you take the joint opinion of two of three persons against one, or if the one who dissented was the Inspector, would you refuse to take the opinion of the two? And, if the Chief Inspector supported the local Inspector, would you accept his view? A. I think that it is only when the local Inspector would be in the minority that the Chief Inspector would be called in.

12519 *Q* The Chief Inspector would only be required to express an opinion when the local Inspector differed from the miners' representatives and the miners' representatives. In the event of that contingency arising, whose opinion would you take as final? A. I would take the opinion of the Government Inspector as final.

12520 *Mr. Anderson* | What would happen if a Manager thought that lamps were necessary, and the Chief Inspector and the Government Inspector thought they were not? Would you surrender the question to the Manager? A. It would be just as the same principle as the decision of any other question. There would be two opinions and

12521 *Q* That the Manager is responsible and the others are irresponsible. I dare say you are aware that in some cases there has been a sort of conspiracy going on between the miners and the Manager to thwart the Government Inspector on the question of the construction of safety lamps, and for a time it has succeeded. Now, however, safety lamps are to be used, and this shows the necessity for the safety lamps which the Government Inspector required to be placed on the mine? A. I think that the present Mining Act states that where you are bound to use a mine safety lamps shall be used.

12522 *Mr. Anderson* | No.

12523 *Mr. Egan* | It is not compulsory at all.

12524 *Mr. Anderson* | It is not better that the matter should be referred to arbitration. If there is a decision of the Inspector requires the construction of safety lamps, and the Manager does not agree, then the matter can be referred to arbitration as provided for in the Act. There are all the matters that should be settled by arbitration? A. I should prefer the matter to be settled by three independent men. I think that they should be able to say what ought to be done.

12525 *Q* But there may be a difference of opinion between conscientious men. That is, unless you decide what is a good mine. If you decide that, the matter is easy; but that has never been decided yet? A. And so.

12526 *Mr. Egan* | Are the three proposed intended to take the place of the Arbitration Board, and to settle the matter themselves? A. That is what is suggested.

12527 *Mr. Anderson* | What is the use of multiplying boards, when there is provision for all matters of dispute between the Inspectors and the men or the mine owners to be settled by arbitration? A. I might mention that, in the case of Koulds, if there had been no inspection by the men, and by the Government Inspector, and the representatives of the mine owners, and they had gone through the whole of the colliery, they might have come to the conclusion that there was gas there.

12528 *Mr. Anderson* | That is doubtful.

12529 *Mr. Egan* | Upon reflection do you not think that the Inspector ought to be vested with the absolute power of ordering the use of safety lamps as proposed in the recommendation? A. I think I have already answered that question. I think that each party ought to have a say in the matter. If the other two persons were agreed, the Inspector, it is then for the Chief Inspector to be called in, and to go and examine the colliery.

12530 *Q* Mr. Robertson pointed out a case in which the Manager might think it necessary to have lamps and the Government Inspector and the miners' representatives might think it unnecessary to have safety lamps. And the Manager has the responsibility resting upon him of the safety of the mine might he be prevented putting in lamps? A. The Chief Inspector has the care of the men, and the mine Manager the care of the property.

12531 *Mr. Anderson* | It is not a mine Manager responsible for the lives of the men as well as for the property? A. Yes.

12532 *Q* The Manager of a mine is the man directly responsible for human life? A. Yes.

12533 *Mr. Egan* | Q You are the difficulty? A. There was difficulty under the other recommendation too.

12534 *Q* That recommendation vests the power in the Inspector? A. What about the Manager then.

12535 *Mr. Egan* | If the Manager is willing, then the lamps would be put in the mine? [See answer.]

12536 *Mr. Egan* | If the Manager wishes the lamps put in, he has the power to put them in.

12537 *Mr. Egan* | Yes.

12538 *Mr. Anderson* | And if the Inspector wishes to have them, he should have the power of ordering them?

12539 *Mr. Egan* | Yes.

12540 *Q* If the Manager is willing to put the lamps in the mine, then there is no need of giving the order, would the Manager be not willing, then we say that the Inspector should have the power of ordering the lamps. There is no dispute on the point of the difficulty arising, in order your suggestion. Do you approve of that? A. There are difficulties there also. If the Inspector wants to put the lamps in a mine, and the Manager says no, what then?

12541 *Q* Then the Manager would have to put them in? [See answer.]

12542 *Mr. Bruce* | It is a matter of responsibility for the Manager, but the lamps would be a charge on the property.

12543 *Mr. Egan* | It might be a step which the Manager might not want to take. However, I do not think I can carry the matter any further? A. No. I think my idea is as good as that in the Recommendation.

17161



17544 Q With regard to these reports every six months, would not instead them be to instead of the other reports, as you said, in reply to Mr. Smith, but in addition to them? [He assents.]

17545 Mr. Bruce Smith: I did not say that.

17546 Mr. Drake: Mr. Bruce Smith suggested to the witness that these reports every six months were to be instead of any other report—that there should be only one report every six months.

17547 Mr. Alderson: That is what I understood.

17548 Mr. Bruce Smith: I did not understand the witness in that way.

17549 Mr. Drake: The witness did not suggest that the Inspectors should not go round and make their reports as usual, but that an inspection should be made every six months by three persons whose he named.

17550 Mr. Drake: Mr. Bruce Smith said, "Instead of the other reports."

17551 Mr. Bruce Smith: I do not think that the Commission understood that I said "instead of the other reports."

17552 Mr. Drake: With regard to these semi-annual inspections which you suggest—would they be in addition to the general inspections which are now made once a kind of extra provision which you require? A Yes.

17553 Q These are not to be the only inspections? A No, they would be outside the regular inspections. That is what the Court understands.

17554 Mr. Alderson: That is what the Court does not understand.

17555 Mr. Drake: The witness has told the majority now.

17556 Mr. Drake: Q Coming to the question of these reports. Do you know whether the practice is in regard to any of the collieries direct or indirect? A They have no interest on the shaft.

17557 Q You never heard of it underground? A Not underground.

17558 Q In addition to the provision of having men take taking, bring them back again, and hang them on a nail, you suggest that no other should exist at the end of a shaft, and every man come out of the pit. What effect would you have? A The deputy does it in the old country.

17559 Q Is this practice adopted universally in England? A Yes.

17560 Q Where does the deputy wait for the men? A Every man has to pass where he is waiting on the surface.

17561 Q The deputy waits at the end of each shaft, he waits until he has passed by him? A Yes, at the divide of the shaft work—except the night-shift it is so.

17562 Q Where is the postman in England if a man does not come out—has the deputy to go and seek him? A The deputy has to seek him.

17563 Q Is it the custom of the mine? A It is the custom.

17564 Q You made a general remark that the taken system might not be adequate, because the men are too careless. I do not think the Commission quite comprehended your meaning. A From the manner in which the other gentlemen put the question to me, I thought that they would have to be brought out to the top of the mine, but apparently the men would only bring them to the surface where the deputies were sitting. If the men go up to the surface then, I do not think there would be any objection.

17565 Q You do not suggest it is a matter like this, that the men would be carried? A No, look if they had to keep them until they got to the top of the mine there might be some hurry or confusion.

17566 Q Now, with regard to the instructions to the employees on the matter of escape—have you any suggestions to make as to how that instruction should be given? A I think that a good plan would be to withdraw the travelling roads at every time. If a man comes to a turn, he would see which side was whitewashed, and would continue along that road. You might think that whitewash would not stand very long, but it would last three months, or more than that.

17567 Q Do I understand you that you want the travelling roads whitewashed, leading out of the mine—that is, at every time? A Yes.

17568 Q You think that that would answer the purpose? A A stranger could easily find his way out when he knew the system.

17569 Q Is there anything further which you wish to say with regard to these recommendations? A No.

Continued by Mr. Barry—

17570 Q I think you said that you saw the telegram that Depledge received. Can you recall to your mind who sent it? A I cannot recall to the name, but he told me that it came from the Manager.

17571 Q Whom was Depledge then? A At Widdows.

17572 Q Where was he working? A He was not working at all.

17573 Q That was some years ago, you tell me? A Yes.

17574 Q With reference to the suggestion you make to the Court as to the appointment of three Inspectors. Suppose two Inspectors agree as to a report and one disagrees. That report is for the benefit of the miners. What would you do with it? A The report would be published.

17575 Q Would you publish each man's views, as the case of a disagreement? A You would have a joint report. And if they found gas they could report on it.

17576 Q Supposing the Inspectors differed what would you do as the matter of the report? Would you publish the report of the two Inspectors, and not of the one Inspector, or would you publish no report at all? A Do you mean as the safety lamp question?

17577 Q No. Supposing two Inspectors agree upon certain facts, and the third Inspector does not agree upon those facts, the one who might not agree might be the miners' representative, would you have the report of the two Inspectors who have agreed published, and not publish the report of the third Inspector who disagreed? A There could be no disagreement, when all that the Inspectors would have to do would be to go round and take the quantity of air and report on the mine.

17578 Q But supposing they do disagree? Have you anything is suggested to the Court as to whether separate reports should be published for the benefit of the miners? A That is what it would come to.

17579 Q And when the reports are published you think that each mine should have a copy? A They should be published in the local newspapers.

17580 Q At whose expense? At the expense of the Government.

17581 Q You would not suggest that a pamphlet should be published by the Government and mailed to each mine free? A No.

17582 Q You think the report ought to be published in the local papers? A Yes.

17583



Witness—E. G. Quinn, 31 February, 1893

- 12582 Q Would you have any suggestion to make with regard to those miners who cannot write or read? A I think [had most of the miners can read now.]
- 12583 Q With reference to the deputies in the old country, I think you said that it was the practice there to see that all the men were out of the district. Can you name some of the officers where it is the practice? A Yes.
- 12585 Q What was the practice? A The deputy would wait at his station until all the men were out of the mine.
- 12586 Q What are the names of the officers? A Psychak, Bishop-Millard, and Whitten.
- 12587 Q Are those the only three places where you have worked, where you have had experience of the deputies waiting for the men to come out of their districts? A Yes.
- 12588 Q Did the deputy see the tokens? A They did not have any tokens.
- 12589 Q Do you propose to dispense with token stoppage? A I did not know there were any tokens in use.
- 12590 Q I understood that it was the practice in the southern mines? [He assents.]
- 12591 A Yes, I thought. Only in a few mines.

Examined by Mr. Robertson —

- 12592 Q That is the usual Royal Commission, I think, at which you have had your little gentlemen send? A Do you say the usual Commission? I have ever been before.
- 12593 Q Yes? A Yes. At the first Commission I have ever been before.
- 12594 A Do you not remember that at Judge Rogers' Commission there was an attempt by Mr. Dalry to have your gentleman taken up by the Commission? A I do not remember it.
- 12595 Q You do not know what decision the Commission were to? A I do not know that Mr. Dalry overruled the matter to me.
- 12596 Q He did bring it before them, but the Commission decided that it was too difficult a matter to go into? A I did not know.
- 12597 Q Now what were you doing at this time? A Working at Clifton.
- 12598 Q Working? A Yes.
- 12599 Q Had you not been on strike for some or less months? A Yes.
- 12600 Q You were a prominent man—one of the leaders—chairman of the district, and so on? A Yes.
- 12601 Q Any one at Clifton that there were other prominent men, in connection with the coal strike, who were employed at the mine at that time? A I do not catch that question.
- 12602 Q You are aware that men who had taken part in the strike were employed by us at the same time? A There were some people employed there, and so was I.
- 12603 Q Now, when you left to go to this gold mine, I was not there, and you did not have leave of absence from me? A That is right.
- 12604 Q Or from the Manager? A Yes. I had from the underground manager.
- 12605 Q You knew the underground manager has no power to grant leave for an indefinite period? A I do not know that. I thought he was acting Manager when you were away.
- 12606 Q You know that it was only away for a day? A I do not know how long you were away.
- 12607 Q You know that the underground manager has no right to grant leave of absence, and, besides, you exceeded your leave? A He did the other man.
- 12608 Q At that time was not the work very slack? A It was not very slack.
- 12609 Q You take exception to a Manager's exercising his option as to whom he shall employ? A I think that each man should have his share of the work that is going on.
- 12610 Q Having been granted leave of absence, and having exceeded it, you thought that you had a right to come back whenever you thought fit? A I did not exceed the leave of absence which I had from the underground manager.
- 12611 Q I am only told you what he requested to me? A I told him that we did not know how long we should be, we might be three months, or we might be more.
- 12612 Q Then there was an interference leave of absence? You might have continued away permanently? A You said that we overstepped the leave of absence.
- 12613 Q You might have been away altogether if the gold mine had turned out good? A We would have been there not if the gold mine had turned out good.
- 12614 Q You take exception to a Manager's exercising his discretion as to whom he shall employ? A I take exception to a man like that, when you employ men and let the other go.
- 12615 Q Then you claim to have a permanent staff at each mine at which you are employed? A If you had several men strike it would not have been so bad. It was only because I said something against the policy.
- 12616 Q How do you know that? A I am sure of it.
- 12617 Q It is more common? A Yes.
- 12618 Q You can have to give evidence under the testing of a black list? A Yes.
- 12619 Q I would like you to explain what evidence there is here relating to my black list? A It is all depends. You may think there is no evidence, but I think there is ample evidence.
- 12620 Q What do you think? A I think it is a little evidence. I say that your underground manager provided me leave of absence, and said that when I came back there would be work for me. But when I came back you refused to employ me.
- 12621 Q What suggestion do you make? Would it be because of your position as a prominent man now? A It might be my former worklessness for all I know.
- 12622 Q Now, let us continue the charge to a black list? A It looks like a black list.
- 12623 Q What is a black list? A A man who has employment because he is doing all that he can to try and help his fellow workmen.
- 12624 Q You mean because he is a union official, and because he has been writing to meetings? A That is right.
- 12625 Q I suppose you know that there have been a great many men officially employed at the Metropolitan Colliery for years? A Yes.
- 12626 Q Men who have taken a very prominent part in union affairs? A Yes, and there are some of these who would be get employment again, and who could not.

12627



17407. Q. The fact of your having been employed after having been on strike for ten months, as an alighting officer, does not show any ill feeling on the part of the Manager of the Metropolitan Railway to women officials? [No answer.]

17408. Q. Now, that is easy to answer? A. That question might be answered in two ways. I did not happen to ask you for work. That might be the answer.

17409. Q. But the Manager was surprised? A. Of course he is, I know that.

17410. Q. And you were one of my women officials employed at the Metropolitan Railway who was not afforded the utmost courtesy and consideration? A. I was told that too.

17411. Q. And yet you came here and, charged with being party to a system of black listing. If you would show me where there is any evidence of black listing, I should feel obliged? A. You must have had a reason for refusing me work, and at the same time giving it to another man.

17412. Q. I would not need making any reasons. I trust my that it is your unfortunate answer, and not on account of any conversation which you have with Under-secretaries. I do not mind stating publicly that I never regretted the step I took. I am satisfied that it was in the interests, not only of the women, but of the men.

17413. Q. Now, supposing there was a provision made by Act of Parliament to prevent black listing—how do you think it would help you or my present case? How would it help you to get employment? A. I do not suppose it would help me very much at present.

17414. Q. Do you not think that my Manager would form his own opinion, because an Act of Parliament could prevent a Manager refusing me employment? A. Yes, could not refuse a Manager employment if he did not wish to employ them.

17415. Q. Do you not see that Act of Parliament would be useless? A. I said nothing about an Act of Parliament.

17416. Q. There is a provision here, in one of these recommendations, that some legislation should be made in future legislation to prevent workmen from the effects of a black list, but at the present moment you have not a single evidence to show that a black list ever existed. Even on the assumption that it does exist, how can legislation help the workmen in that way? A. Legislation can do a great many things, if it is brought properly into action.

17417. Q. Would legislation have forced me, or any other Manager to employ you after the Quirk's strike? A. That was no more than any other strike. Simply because a man takes a leading position in a strike, it is to get no more work.

17418. Q. I ask you to show me how legislation can help you to obtain employment if the Manager does not think it fit to employ you? A. You will have to wait until the Bill is brought in, and see the time laid down. The meaning is to prevent anything of the kind occurring again.

17419. Q. How will it help you more in the future than it is the past? A. It is a more explicit something about a black list, the officials take some opportunity to get out of him, and that way to be stopped.

17420. Q. Do you think any man who reports anything at the Metropolitan Railway would be sent away? A. I think so, but I have no evidence to back it up. What I said in Sydney is what the whole of the Government was about.

17421. Q. According to your own account, you sent nothing to Sydney that reflected on the Manager? A. It did not reflect on the Manager. It was the dispute work at the time that was causing the suspicion.

17422. Q. What grounds have you for saying that anyone who reports any trouble at the Metropolitan Railway would be punished? A. I think that there is good reason for saying that.

17423. Q. With regard to the suggestion of point as to ascertaining whether men have been left in the men, and whether they might be injured—you have never heard of any such case? A. Any such case as what?

17424. Q. As to a man having been left behind in a mine? A. Not injured, but it is a danger, which ought to be taken with a view of preventing anything of the kind happening. I have known men to be in a mine and a half behind those men for coming out. There might be something wrong with them, or not.

17425. Q. There are 500,000 to 600,000 men employed in the British coal fields—not to speak of our own experience here for many years, and such a thing has never happened as a man being left behind injured. Do you think it necessary to have special legislation dealing with some trouble with regard to men, such a remote contingency? A. I think it is necessary to get that every man is taken out of the mine. If you see only one case, that is one much less good for the sake of any a few years.

17426. Q. You say that it is necessary to get that every man is taken out of the mine. If you see only one case, that is one much less good for the sake of any a few years.

17427. Q. What kind of the men go into the mine in the old country? A. No shift.

17428. Q. Then the deputies could not wait until the men came out of the mine? A. There are two shifts of men.

17429. Q. That would require two shifts of deputies? A. It would only require one man to see that the whole of the men were out.

17430. Q. The deputies would have to be in the mine three hours before the men began work, and remain there until all the men came out of the mine. Could they do that? A. I do not think it likely.

17431. Q. As to the labor system—you say yourself that the men would be negligent, and they would pass the lowest men in to hang up the lantern? A. They might do it.

17432. Q. Is there any human nature—without supposing any design on their part of course? A. I think they would hang up the lantern, if they were required to do so immediately they left the lamp, say in the last man out of the mine.

17433. Q. Then, if they did not, the officials would become alarmed, and would be sent on a wild goose chase searching for men who might be confidentially at home? A. Well, in the old country the deputies see that the men are out of the mine.

17434. Q. I do not remember it still. I have had considerable experience in North Wales and in Scotland, and I never heard of it. In the case of men working with safety lamps, would not the requirement be met by the men hanging on their lamps? A. Yes, as a rule it is in a dark before the lamp men would find out that was done.

17435. Q. Is it a mine where the lamps are handed to a responsible official, he would find out in a little time whether any were missing? A. He would in a couple of hours, I suppose.



17574 Q. Coming to the joint inspection on the part of the Government Inspector, the check inspector, and the representatives of the Company—what have you to say to that? Would they inquire into cases of gas, or any other matters? A. They would inquire into everything connected with the mine.

17575 Q. Why do you mention the under-manager specially? A. It has always been the custom for the under-manager to go round with the Inspector.

17576 Q. Is an important matter like this, should not the Manager go round? A. What I mean is the representative of the Company—the highest official you have.

17577 Q. Would you give this sort of inspectors power to decide what system of working should be adopted? A. No.

17578 Q. Then what is it you want? A. The inspection would show to the public and the workmen the condition of the mine, the quantity of air which was circulating, and the general safety of the mine.

17579 Q. If the safety of the mine, as the opinion of those three men, depended upon another system of working being adopted, they would decide that? A. Decisions is to be arrived at by two votes out of the three. Suppose the check inspector and the Government Inspector decided that another system of working ought to be adopted, would you give those two men the right to say how the mine should be worked?

A. No. What I mean is this: The Government Inspector now generally goes round, accompanied by some official of the mine. Why not let the other system be represented at the inspection, by a representative of the workmen going round also, and the report, in such a case.

17580 Q. When is to come after the report? A. If the mine is satisfactory, nothing more is needed.

17581 Q. Suppose, in the opinion of the Government Inspector and the Check Inspector, it is satisfactory? The Mining Act will provide for the establishment, if the mine is not in the condition it should be.

17582 Q. Would you leave the matter referred to a Board of Arbitration? I may say that something to the present Act there is no power to refer such a matter as that of the safety lamps to arbitration. The Inspector has not that power. Should that joint report be referred to arbitration at the instance of any one of the persons who inspect the mine, or at the instance of any two out of those three persons?

A. I hardly think there would be any necessity to refer any matter to arbitration. There would be no necessity as long as the mine was in working condition—there would be nothing to arbitrate on.

17583 Q. But suppose in the opinion of two out of the three Inspectors the mine was not in a safe condition? A. Because of gas.

17584 Q. Because of anything? You see there might be a difference of opinion. The safety of a mine lies mainly on which there may be a difference of opinion—and there may be honest difference of opinion? A. Yes, those representatives inspecting the mine is a step towards arbitration.

17585 Q. You would not constitute those three representatives a final Court of Appeal to decide any question as to the management of the mine? A. No.

17586 Q. I mean as to the working of the mine? A. My idea is for the three representatives to inspect the mine, and to have their report on a public bill. The Mining Act deals with the vent—the Chief Inspector would deal with it.

17587 Q. At present the Mining Act could not follow up a report of that kind, unless there was something not so immediately provided for in the Act? A. You would have to introduce a new bill.

17588 Q. As to the other matter, the providing of means of escape. You suggest whitewashing at every turn in the working coal. I may say this, that it is the only sensible plan that has yet been suggested, and the only practical plan, and I entirely agree with it? A. I am so.

Examined by Mr. BISHOP.—

17589 Q. I understood that the joint inspection you propose should take place every six months? A. Yes, I mentioned every six months.

17590 Q. Do you not think that it is a bad principle to have any particular time fixed for an inspection? A. When I thought of the matter first, I did not mean to name any time. It might be better to have the date open.

17591 Q. Is there not a suspicion that mining managers prepare specially for an inspection, when they know that the Inspector is coming? A. Not that I know of.

17592 Q. Your idea is that this inspection should be made when the mine is running in its normal state, and not when it has been specially prepared? A. Yes.

17593 Q. Would it not be better to have the inspection at regular, instead of fixed, periods, and without any notice, excepting to say that the Inspector will be there in two or three days? A. That would be better than naming a time.

17594 Q. Supposing that the joint inspection was to be arranged so that the Government Inspector could notify the Mining Inspector, the Manager's representative, and the miners' representative, that the inspection would take place in any three days time? A. Yes, that would do.

17595 Q. Do I understand you to mean that the inspection shall be a complete and thorough one? A. A complete inspection of the whole mine.

17596 Q. I take it that that would embrace all the waste workings that could possibly be reached? A. Yes.

17597 Q. And also the abandoned places? A. Yes.

17598 Q. Is any available part of the mine? A. Yes.

17599 Q. Do you suggest that the most up-to-date appliances should be used on that occasion—such as the hydrogen lamp for testing for gas? A. I am not well versed in that particular lamp.

17600 Q. Do you suggest that the party making the inspection should be equipped with the best appliances? A. There should be equipped with the best appliances that could be got.

17601 Q. I want to know something about the black belt and other gas tests? I understand you to say that you were black-belted and examined, because of something you said at a meeting? A. That is what I have heard more. It is only rumour.

17602 Q. Was this meeting, which you alluded to Sydney, a meeting held at the home of the strike? A. Yes. The Metropolitan Gallery was not on strike.

17603 Q. Will you tell us as nearly as you can what the representation was you made on it? I gave the amount of money which we were paying away fortnightly for accidents.



17698. Q You gave information concerning the amount of money you were paying away towards the support of those who had been injured in the strike—at which time? A At the Metropolitan Gallery.
17699. Q In that all you did? A Yes.
17700. Q Subsequent to attending that meeting, did you work at the Metropolitan Gallery? A Yes.
17701. Q Did the attendance of the strike bring with it the desire that all the men were to go back to a lady? A Yes, we all want back.
17702. Q There was no necessity for you to apply personally? A I want to work afterwards.
17703. Q With the lady of mine? A Yes.
17704. Q How long was it before you went to the gold mine you spoke of, that you asked her to let you go? A Three or four months.
17705. Q Three or four months before you went? A It was three or four months after the strike that I went away.
17706. Q You applied to the under manager for extended leave? A Yes.
17707. Q How long before you left? A Only a day or two before I left. The Manager was away at the time.
17708. Q The whole of the time? A Yes.
17709. Q When you made application? A Yes.
17710. Q When you left? A Yes. I think I made application on a Friday and went away on a Monday.
17711. Q Did the under manager say it would be subject to the approval of the Manager? A Yes.
17712. Q He made no qualification? A None whatever.
17713. Q Do you know that other men were being employed apart from your mate, whilst you were refused employment? A There were only the two of us together.
17714. Q When you were refused employment? A There were only the two of us together when we went to ask for work.
17715. A. Edwards? I have already stated that I would exercise my option as to when I would employ, and I am not inclined to pursue this matter further.
17716. A. Atkinson? I do not wish to offend my friend.
17717. A. Atkinson? This is the second Commission at which this matter has come up. I have already said that I would exercise my option as to when I would employ.
17718. A. Edwards? The matter is now before us now, and I want to put it to the facts.
17719. A. Edwards? I have told Charles the reason why I did not employ him.
17720. A. Edwards? If you would allow the witness to answer questions, it would be much better. I want to know whether the witness has any reason for knowing whether other men were being employed at the mine whilst he was refused work.
17721. Q Were other men being employed apart from your mate? A Yes.
17722. Q You have given in the reason why you think you were black-balled? A Yes.
17723. Q Do you think it would be necessary to instruct employers as the matter of scope, if you proposed to whitewash the travelling trade in every town we adopted? A I think the whitewash would be a sufficient indication to my man—he could not get very far wrong.
17724. Q The only thing would be to follow the whole scheme, or any other indications which might be put up.

ALFRED ARTHUR ATKINSON, who had been previously sworn, was called, and further examined, as under—

Re-examined by Mr. Edwards—

17725. Q I think you will preferring, as a matter of fact, that there has been objection raised by the Manager and the Agents to the introduction of safety lamps? A Yes.
17726. Q Can you tell us of any cases that have come under your notice where this objection has been raised, either by the miners or by the Managers? A Yes, at the Darwood, the Swan, the South Office—
17727. Q Just tell us who were the parties who objected? A At Darwood, both parties; at Swansea, both parties; at South Office—I have had no correspondence from the men, but the management objected; at Bally, both sides, at Swansea and at the South-office the management have objected; at Wm. Walwood, the management have objected; but at Wm. Walwood, the management have objected; and at Wm. Walwood the management have objected; but they asked to put in safety lamps.
17728. Q Then that was the last? A Yes, of objection.
17729. Q Have you any list of places where the miners have desired safety lamps to be brought into use?
17730. A. Bruce Smith? Do you mean now the Knott's disaster, or before it?
17731. A. Edwards? Q At any time? A I do not remember. I do not think there is any official communication from the miners asking that lamps should be used.
17732. Q Then it is the majority of cases the objection has come from the Managers? A We have correspondence with the Managers on this question, and in that way we have definite objections.
17733. Q Are there any other men, besides those two which you mentioned, where they intend to put in safety lamps, but where the lamps are still in use—and I might be supposing that you have requested safety lamps to be used there? A Yes. But the lamps are still in use.
17734. Q You told us of you? A There are Howell's and Duckenfield, the Wm. Walwood—everything was now working as before, besides—and I forget to mention Wm. Walwood.
17735. Q Who objected in the Wm. Walwood case? A The Managers. They also intend to use safety lamps, but they are only using them now in certain parts of the colliery.
17736. Q Am I to understand that they would put in then safety? A It is not necessarily distinct to make that.
17737. Q You have corresponded with them, and before they intend to do so? A Yes.
17738. Q Are there any other instances where safety lamps are used? A Mount Robin.



- 17137 Q They are going to adopt them then? A They are using the naked lights there, but they are going to use safety lamps, and then there is Mount Pleasant, with the exception of some work going on in some places.
- 17138 Q There are all collieries where the Department has suggested the use of safety lamps, but so far the request has not been complied with? A To some extent it cannot be complied with, owing to their being unable to get lamps.
- 17139 Q They have placed that before you as a reason? A Yes, several of them have.
- 17140 Q Are there some mines whereby the Department, without any excuse? A Yes, there are some who say that they will not use safety lamps.
- 17141 Q Two you give in the names of those? A There is Brown's, Duckenfield, and Sisson's Furnels. I think they are the only three who have refused.
- 17142 Mr. Henry Q Is not Brown's and Duckenfield one and the same? A No, the Duckenfield is a separate colliery.
- 17143 Q I understand that you do not consider it necessary to have one through at any regular distance, A That is my opinion.
- 17144 Q Do you think that it should be required that a mine should provide wooden battens after a certain distance from a cut through, instead of narrow? A Not so long as the air is carried to the face by the ordinary battens.
- 17145 Q I suppose you have observed, where narrow girders were used, it did not serve its purpose where it is put up for long lengths? A I have sometimes seen a batten which has not been fixed up properly, but with wooden bats I think the air would be carried to the face. Wooden battens would also be liable to derangement.
- 17146 Q If tapered and grooved battens were erected, would there be the same likelihood of derangement as with narrow? A I have never heard of tapered and grooved battens being used.
- 17147 Q What sort of battens have you heard of or seen? A Ordinary  $\frac{1}{2}$  inch deal.
- 17148 Q Using battens? A I do not know how you describe them, but they are not tapered and grooved.
- 17149 Mr. Henry Q Do they overlap? A No.
- 17150 Q I mean staggered? A No.
- 17151 Mr. Ashmore Q But they overlap them when they put them up, so as to prevent the escape of air? A That is the intention.
- 17152 Q Do I understand you to say that they would be as likely to become deranged as narrow? A Perhaps not so likely.
- 17153 Q Do you hold the opinion that ventilation can be carried on well with narrow as with wooden battens? A I think the narrow affords a little more opportunity for leakage than the battens, supposing both are carefully put up.
- 17154 Q You consider that, if both are carefully put up, wooden battens would be more efficient? A Yes.
- 17155 Q We have heard something said about its being necessary for a certain amount of ventilation to escape into the other workings. I suppose that could be done by regulation, and that they put could allow the exact quantity to escape? A I do not think there would be any necessity to regulate it. The air would either be going up the intake or coming back behind the battens.
- 17156 Q Did you state that it was necessary for a certain amount of air should escape through the narrow? A I do not remember.
- 17157 Q Then, where narrow is used, it is not necessary for any air to escape—it should all be controlled to the working face? A It is impossible to say so.
- 17158 Q Have it that? A A certain amount will always escape, whether you use wooden or narrow battens.
- 17159 Q Do you think it is possible, with narrow, that the whole of the air intended for a certain face may escape before it gets to the face at all? A If the narrow has very large holes in it, and is used for the purpose for which it is used, and is sloped put up in that case, the greater portion of the air will escape.
- 17160 Q After all, I may take your opinion on this matter to be, that, of the two systems of carrying ventilation in mines, wooden battens is most efficient? A Yes.
- 17161 Q In view of your statement that wooden battens is more efficient and is free of the complaint that narrow battens give, do you not think that in the case of long lengths it would be better to make the mine which use the most efficient means of carrying the air? A If there is any difficulty in getting the necessary ventilation by using the ordinary narrow battens, then I think wooden battens might be resorted to. But I do not think it is necessary to make a regulation making it compulsory.
- 17162 Q Have you not heard of complaints where long lengths of narrow are used, and do you know of wooden battens being used here? A Yes, in the A. A. Company's No. 70.
- 17163 Q Is that the only one? A As far as I know at present.
- 17164 Q With these complaints, and also with the fact that long lengths are being worked without cut-throughs, still so wooden battens is being used elsewhere? A No.
- 17165 Q Do you take that as an indication that, if the matter is left to the management, no wooden battens will be used? A I think that if the management were convinced that wooden battens were more efficient, and not more costly, the probability is they might try it.
- 17166 Mr. Henry Q It is more costly is it not? A I think, the experience of the A. A. Company is, that even a good, the wooden battens is no more costly than the narrow battens.
- 17167 Q Because it is more durable? A They run on it more frequently.
- 17168 Q It would involve the use of a good many more stails or posts? A The wooden battens is fastened on to the props.
- 17169 Q But the props must be at a more regular distance than for ordinary narrow? A I do not think so.
- 17170 Mr. Ashmore Q The wooden battens is kept to regular lengths like the others? A Yes.
- 17171 Q So that it can be taken down and handled without any great amount of labour? A Yes.
- 17172 Q Now, in connection with carrying the air in a mine, and you suggest any clear means of ascertaining over the face than the plan generally adopted, in order to ascertain if the quantity of air set down by law is coming into the pit? A Do you mean, if the amount of air is taken at the split.



17763. Q I suppose you know that split measurements are taken a long way from the face—sometimes half a mile? A. Sometimes.

17764. Q Do you suggest any way of taking the measurement closer? A. In cases where there is any doubt about the necessary quantity of air being supplied to the men the measurement can, as I have already said, be taken close to the commencement of the split, or the intake side—and possibly at the middle of the split, or where it has left the fan more in the split. Beyond that I have no suggestions to offer.

[The Commission, at 4 p.m., adjourned until 11 a.m. on the following day.]

WEDNESDAY, 18 FEBRUARY, 1903, 11 a.m.

[The Commission met at the Lord Alford Court, Berthingham.]

Present—

C. D. B. MURRAY, Esq., D.C.J. (PRESIDENT).

D. A. W. ROBERTSON, Esq., CLERK— | D. HITCHIK, Esq., CLERK—

Mr Bruce Smith, Barrister at Law, instructed by Mr. Wood, Queen's Counsel's Office, appeared on behalf of the Crown.

Mr. A. A. Atkinson, Chief Inspector of Collieries, assisted Mr. Bruce Smith.

Mr. A. A. Lynght, Solicitor, appeared on behalf of—

- (a) the representatives of deceased miners, widows, &c. (victims of the explosion);
- (b) the employees of the Mount Kembla Colliery (survivors, widows, &c.); and
- (c) the Hawesbury Colliery Employees' Association (the Northern Mines' Union).

Mr. U. G. Wade, Barrister at Law, instructed by Mr. C. J. Barry, was present on behalf of the Mount Kembla Coal and Oil Company (Proprietors of the Mount Kembla Mine).

(Mr. J. Garlick, Secretary to the Commission, was present to take shorthand notes of the evidence and proceedings.)

Mr WILLIAM DOWER was sworn, and examined, as under:—

Examination as chief by Mr. Lynght:—

17765. Q What is your name? A. William Dower.

17766. Q What age are you? A. I am a miner, and District Chief-Inspector for the Colliery Employed Federations, at Newcastle, at the present time.

17767. Q And you are deputed by the Colliery Employed Federation of the Northern district to give evidence in support of certain recommendations? A. Yes, that is so.

17768. Q What mining experience have you had? A. I have had about thirty-five years' experience as a coal miner.

17769. Q And where was that experience gained? A. Principally in the Newcastle district.

17770. Q Now, dealing with the recommendations from the Hawesbury district, the first one is "Managers, under-managers, deputies, and shot-bearers, to hold certificates of competency by examination, and to have had five years' practical mining experience, before being eligible for respective positions." Would Your Honor permit Mr. Dower to offer to any notes he may have on this matter?

17771. Mr. Bruce Smith: Yes.

17772. Mr. Bruce Smith: Notes made by himself.

17773. Mr. Lynght: Yes.

17774. Q Is he now speaking of recommendations No. 1? A. Managers and under-managers certainly have to have certificates now, but deputies and shot-bearers have not. I consider that deputies should have some qualification beyond simply five years' experience, for the simple reason that they ought to have some knowledge of the parts of a mine, and the gear likely to be met with in coal mines, and they should have general experience in mining as well as experience of actual coal-getting—a matter of nearly five years at one time would not be sufficient experience.

17775. Q It has been suggested that the employment of deputies should be left to the discretion of the Manager—can you give us instances of your own knowledge where deputies without any mining experience at all have been employed? A. Practically speaking, yes, I have known men come straight from the streets from farming or something like that, to coal mining, to do a little shift work, and probably in the course of a few years get the responsible position of a deputy.

17776. Q When these men are in the Newcastle district? A. Yes.

17777. Q In your opinion, is it safe to trust the discretion of a Manager exclusively in the selection of a deputy without any criticism of his competency? A. I would put it this way, that Managers are very honest, after all, and a little bit of reference to relationship may cause them to push a man faster forward than he would go under ordinary circumstances.

17778. Q Now, you are aware that certain Managers and under-managers hold what are termed service certificates? A. Yes, there are a considerable number, I believe.

17779. Q In your opinion, is it wise and expedient that persons only holding service certificates should not be eligible to continue in their positions, in so far as respects to the position of Manager, or under-manager? A. As a manager, yes, but in a great many cases, as far as the service—

that there are a considerable number of men with respect to whom it is very doubtful if they had the requisite qualifications when they got the service certificates. However, they got them, and certainly there are a good many of those men held in contempt to-day by the workmen, although they held a position of Manager. It is very doubtful if the intention of the Act was not frustrated to some extent by the method of the administration.

17780. Q That being so, do you think that some steps should be taken for persons holding service certificates who are now actually managing collieries to be called upon to give more evidence of their competency? A. That is the opinion of my friend in the Newcastle district.

17781. Mr. Bruce Smith: Is it his own opinion?

17781.



Witness—W. Brown, 14 February, 1908.

17761. *Mr. Langley* | Q. What does the Board of the Newcastle district represent, as point of members?  
A. Between 2,500 and 3,000.
17762. Q. Now, I presume your remarks applied to the shareholders as well as to the deputies? A. It is extremely necessary that a man should have some experience of how to discharge these expenses. It would not do to turn a nobody loose in a mine and to let him live there.
17763. Q. And do you know that there are shareholders represented who, in your opinion, are not competent shareholders, and are persons whom it is not advisable to treat with such a position? A. Not of my own knowledge, because it is only very lately in the Newcastle district that shareholders have been employed, and my rule there that I have met are men of experience, but still the same remarks that apply to deputies would apply here too; a man might be put on, but not have the necessary experience, for the same reasons.
17764. Q. Is there anything else you wish to say on Recommendation No. 11? A. No.
17765. Q. Now, Recommendation No. 2—"Inspection to be carried out with absolute power to order use of safety lamps." What do you say upon that? A. I do not think so. I think it is a matter that should be referred to some competent authority to deal with, an independent tribunal of some kind, because, undoubtedly, it would cause a lot of friction, and has caused a lot of friction already, in my knowledge. I think it would be a good deal better, probably, if the satisfaction of the use of the Act were said.
17766. Q. I will read to you the modifications suggested by Chief Inspector Alderson—"I would propose that the Chief Inspector should have power to refuse the use of safety lamps, subject, however, to satisfaction, as provided by the Coal Mines Regulation Act, section 55." Does that amended suggestion meet with your approval? A. Yes, that fairly represents it.
17767. Q. And, pending the determination of the Arbitration Court on the question, what would you suggest? A. I would suggest a conference between the representatives of the three parties interested, first. That could be done immediately, in fact it has been done already, because I have been at a conference of that kind before.
17768. Q. And has that proved satisfactory? A. It resulted in the large gung (see Bebban, directly) within more fortnight or three weeks.
17769. *Mr. Robinson* | Q. Do you say that the lamps were put into Bebban within a fortnight of Mr. Alderson's report? A. No, I said some fortnight or three weeks after a conference took place between Mr. Haule, the local check inspectors, and the Manager.
17770. Q. Was that the first conference that was held? A. The first that the miners were represented at, that I am aware of. We asked for a conference, and Mr. Haule met us at the colliery office, along with the Manager.
17771. A. But had not the miners raised objections long before? A. I believe the Manager had raised objections long before.
17772. Q. But had the Manager said the miners not raise objections long before that conference? A. Certainly, the mine had the Manager said that there was no necessity for the lamps to be put into Bebban.
17773. *Mr. Langley* | Q. The Chief Inspector suggested that, pending the finding of the Arbitration Board, the Manager should put in safety lamps—do you approve of that? A. Naturally, for the simple reason that the impression in the northern district is that Mr. Alderson would have safety lamps in every mine in the northern district almost immediately, if he had his way. That is the general impression, there is no doubt about that, whether right or wrong.
17774. Q. Then you do not approve of the Chief Inspector having the power to compel the Manager to put the lamps in pending a decision? A. Absolutely so.
17775. Q. Do you think that the Conference would be an effective way? A. I think so. I think the Inspector, in that way, would have full opportunity of putting his views before them, and I do not think that the men are unreasonable—I have found them reasonable always, if the men is put reasonably before them.
17776. Q. You see the parties that will suffer, and finally it is not impossible to suppose that they would want large being put in if they thought their lives were likely to be risked through the lamps not being put in.
17777. Q. Recommendation No. 2—"Ventilation by furnace prohibited, and has substituted." What do you say to support of that? A. I am decidedly in favour of doing away with the furnace, and of having better substituted.
17778. Q. Have you anything in particular to say upon that? A. There is always this danger, at any rate, that if a furnace is put in, the ventilating appliances, as represented by a furnace, might be completely destroyed, and it would cause a great deal more risk for reasons which afterwards I mention, a furnace, in no case that ever I have found, is as much as to work as a fan. It is not so reliable. It depends entirely on the hand work of one or two men, generally one to keep it going, and they are working as a rule in bad air, and are not able to keep the system up, and they do not try to. I have known on occasions, in Wallard Colliery again, where I found a furnace drawing a current of only 50,000 feet of air, and that furnace, if kept going, was able to keep up 120,000 feet.
17779. Q. Was that during one of your check inspections? A. Yes. Of course the furnace men with it was not a fair test, but the fact remains that no single man could do the work to keep it going up to near its maximum.
17780. Q. Is that a correct illustration? A. I would say it was a couple of years ago, or more, perhaps.
17781. *Mr. Robinson* | Q. What do you mean when you say the furnace men said it was not a fair test? A. We caught him at his meal. He had not got our colliery that it was likely to drop on to him.
17782. Q. Do I understand you to mean that you caught him at the normal state of ventilation? A. It was not far.
17783. *Witness* | The normal condition of that furnace was about 100,000 feet. That is what it was supposed to do usually, from 90,000 to 120,000 feet, and we found it at about 50,000 feet that day.
17784. *Mr. Langley* | Q. And all the men employed at the colliery was done at their ordinary work? A. Not all of them, but the majority of them were.
17785. Q. Was there any explanation given for the small amount of ventilation, except that it was not a fair catch? A. No. We understood the thing. We did not press it.



17006 Q Do I understand, from what you remark, that, when you do go to make these check inspections, preparations are made for you? A I would not say that, because the same thing would apply to the locomotive inspector, because no locomotive can get near the mine without being noticed; but to inspect a railway like Wallend takes three days. Well, it is possible that the foreman man charged in this case that we were not going to check the furnace shaft, and it was that last thing we did, in the end of the day's inspection, before we finished. I am satisfied it is impossible to make an inspection of a railway without me being known all through the railway, if they wish to let it be known.

17007 Q In addition to the same you mentioned, are you satisfied other men whom you heard the witnesses declare because of the furnace, throughout your entire check inspection? A I would not like to say that I have. There is one more to my mind's eye and that is that they will be satisfied at present, that I believe that possibly the fault is not with the furnace altogether so much as with the position of the mine itself. As my rule, I do not think anyone need hesitate a moment in saying that a fire is in before a furnace unless they see it.

17008 Q I think that is agreed. The only point is whether, in cases where there are furnace in existence, the Legislature should prohibit their use, and regulate the use? A I think so.

17009 Q Reconsideration No 1.—"Waste workings to be absolutely sealed off, and surrounded by return airways; such return airways not to come in contact with workings." That is agreed, as it stands, on account of its being impracticable, in the opinion of the Northern Union. I would like to hear what you have to say upon that matter? A I do not believe in sealing off under any circumstances, if it can be avoided. I believe in ventilating gas as well as working plants, if it is practicable at all. Of course it is sometimes necessary to seal off a portion of a mine, but that, generally, should only be done in the case of fire, or something like that.

17010 Q Is a small gasf, where it is practicable, should it be sealed off, in your opinion? A There is always a certain amount of risk in sealing off. It comes to accumulation of gas, if there is any there to accumulate, and there is always the danger of a fall knocking the stoppings out and driving the gas out in fact, I know of a mine only a few months ago something similar.

17011 Mr. Wade? Q What is that case?

17012 Mr. Lynam? Q Mr. Wade wants to know what is that case? A In the Newcastle Co's B Pit.

17013 Q What happened? A That was a fairly small off and would work about twenty levels in it. It was bounded on one side by the sea barrier, by the narrow levels that communicate the two pits, the A and B pit, by a fault, and by what they call the Lallymore's Heaving, or the Sea Heaving. The levels were worked on this fault: the inclination of the fault was to the B pit, the working places were both just down on the fault. There were a pillar as far as to be taken out, and another or either the Manager thought it better to leave them in. They sealed the gas up, and the ground started working, and threatened the communication between the two pits, and finally fell on the gas, broke a stopping, broke a stopping, and drove a considerable quantity of blackdamp out on the main airway to the Lallymore's Heaving. If it had been developed the world might have been disastrous. It happened to be blackdamp in this case, but still it caused the pit to knock up.

17014 Mr. Robertson? Q Was that main airway on strike? A Yes, it was an intake to the district working the two pits at that pit.

17015 Mr. Lynam? Q And what kind of stopping was put into that place? A What were called return stoppings, certainly.

17016 Q Then you give that as an illustration of the danger of sealing off any work? A That is how I look at it. There is always a danger of gas, or working of that kind, accumulating where the gas is completely shut off from the air.

17017 Q And you suggest that the gas should as far as practicable be vented? A Yes.

17018 Q You mean by an independent vein of air? A Or the return air from working shafts.

17019 Q Then you approve of that part of the recommendation, that it is to be surrounded by return airways? A I do not know. That seems to me almost impracticable in many cases. To attempt to do that in those pits that I know now, would cost nearly as much as replacing the pit again, or opening a new one.

17020 Mr. Robertson? Q But, with reference to the future, what do you say? I think your remarks only apply to existing conditions? A It would not do more than the drying of a narrow place, if it is the case workings, although I do not actually see the necessity of it.

17021 Q It is not possible in an airway, in a new mine, or a new district, that the old workings or mines that are surrounded by return airways? A It is possible enough, certainly.

17022 Mr. Lynam? Q Do you think that would be a wise precaution to have taken in the future? A It would not do any harm, certainly.

17023 Q Then you approve of that recommendation so far as the future is concerned? A Yes.

17024 Mr. Atkinson? Q In the case of the full you have mentioned, if there had been a return airway instead of an intake airway, would this danger, which you foreman might have arisen from that fall, still have been there? A Yes, the possibility is that the fall would strike the stoppings between the mine and the intake, just the very same.

17025 Mr. Robertson? Q But then the return airway would have carried away the blackdamp without its coming in contact with the men at the fault? A I am of the opinion that, under the circumstances, if there had been a return airway between the intake and that fall, there would still have been a considerable portion of the blackdamp forced out on the main airway.

17026 Q If the stoppings were blown out between the intake and the main airway, the result would have been to short-circuit, and noxious gas would certainly have been taken away to the furnace or the fault? A The boys would be left without air altogether, in that case.

17027 It is better to be left without air than to have blackdamp? A Yes.

17028 Mr. Atkinson? Q How far were the working faces, in that case, from where the fall took place? A They were on the adze side. There is a 5-inch barrier, and then the working faces were made of that. I think it is a safe barrier, if I might say so.

17029 Mr. Lynam? Q I take it, then, that you do approve of the matter being surrounded by return airways? A Yes, in new developments.

17030 Q And, where practicable, under present conditions? A Yes.



Witness—W. Brown, 14 February, 1901

17331 Q Are you opposed to an intake always passing a waste? That is to say, an intake that has to go on to the main? A And it is a waste open?

17332 Q Yes? A I do not believe in intake air being taken past an open gas, and carried into the mine—naturally so.

17333 Q In your opinion, what is that? A My opinion is that it would violate the air.

17334 A That is, it is bad management to do such a thing? A Yes.

17335 Mr. Dwyer: Q How would you prevent that, when you say you do not believe in the working off, and you say it is not necessary to have the gas surrounded by return air ways? A I do not see that it is necessary to have the gas sealed off—in this case there would be a line of stoppings shutting it off from the intake airway.

17336 Q Supposing there were nothing but intake airways round that place, what would you do then? A Then you would have to seal it off. That would be a very unusual condition of things.

17337 Mr. Dwyer: Q Let us show you how on this plan. [Mr. Dwyer then pointed out the different gas on the plan, showing the witness that, on the side towards the No. 1 main line, the gas was passed by a return air way, but on the three sides, the south, east and north, the roads by which it was passed, closed respectively the 2nd Right rope road, the Drumcut heading rope road, and the 3rd Right rope road, were all intakes as ways. Mr. Dwyer informed the witness that on the eastern and northern sides of the gas there were some openings from the gas on to the intake airways.]

17338 Mr. Dwyer: The point is that there was an intake passing to open waste.

17339 Mr. Dwyer: That is not correct.

17340 Mr. Dwyer: I do not think there is any evidence that that waste was open. It was stopped up. 17341 Mr. Dwyer: With every report? A When there is evidence, and I am now in possession of evidence which I did propose to offer to the Commission, hereafter, from some witnesses, that not one of these openings was closed—the practice was to leave the whole of them open.

17342 Mr. Dwyer: I do not know what evidence you intend to bring; but my reputation, from the evidence that is before us, is that the openings were stopped off by stoppings.

17343 Mr. Dwyer: I understand that it is not too clear that that was so. Mr. Morrison said a few of them were open. I am putting this question to Mr. Brown, in view of what Mr. French said—what would be do if an intake airway were allowed to pass an open gas? A In this particular case, if you have deposited it correctly, the air must have first cleared. It must have gone through the gas and into the return.

17344 Q No doubt some of it did seep through the gas.

17345 Mr. Dwyer: Q The roadway would be for the air to go into the gas and pass out into the return? A Yes, that is reasonable to suppose.

17346 Q Yes, but it is a 30-ton gas, heavy and runned tight? A If it was tight and settled, it should have been stopped off.

17347 Mr. Dwyer: Q Suppose a fall had taken place in the centre of the gas, and had left the northern side with a great open that had not been closed by falls and the intake airway, what would you do then? A I would seal it with a seal of air through that gas.

17348 Q But suppose it was closed up about the seals so that no air could get through? A My original statement would apply to that. Because, if there were a good portion of that gas standing, certainly, if you sealed it tightly off, it would be likely that there would be an accumulation of foul gas of some kind—that must naturally follow.

17349 Q If the stoppings are open, and a very large portion of that gas is filling near the intake airway, so it would naturally be generating gas, that gas would naturally come out in the intake airway? A Certainly it would, if there is no circulation through to the return.

17350 Q Say, for instance, that an accumulation took place in the gas when these stoppings were in, secure, and a heavy fall took place in the part of the gas which remained settled, and with a very large accumulation on the intake airway? A The result, so my mind, would be exactly the same. If a heavy fall took place, it would show any reasonably tight stopping set, and the gas would be forced out on the inside of the mine; but if your construction is correct, that there was no circulating through that gas to the return, then it should have been stopped off altogether, to stop the circulation from the gas getting out on the intake airway.

17351 Q In the case of a gas known to be standing and likely to fill at any moment, which may have accumulated an accumulation of carbon gas, what would you do with the men working on the intake side of that? A Have them out. They should not have been in there.

17352 Q When you stoppings a heavy fall? A The men should have been knocked off and sent out.

17353 Q Without any knowledge of miners, of what the fall might result? A Yes.

17354 Q And, in all cases like that, you would always have the men out? A Yes, in anticipation of a heavy fall of ground, it is not right for men to be on the intake side of it at all, at least it ought not to be allowed.

17355 Mr. Dwyer: But would it make any difference if the fall discharged the gas, causing there was gas in there, into a return airway, if the men were not in, as the case that the return airway passed the place where the fall was reported? A, I think, where a great displacement like that would happen, it is likely in any mine the gas might be driven in, because the air would be forced to go in in some direction probably. The gas might be driven into any corner of the mine.

17356 Mr. Dwyer: Q Through disarrangement of the miners? A Through a disarrangement of the ventilation altogether. With a great disturbance of air like that it is hard to say where any may travel in the mine.

17357 Q Mr. Dwyer: Then you cannot provide for such a contingency? A You can do this: there should be a proper party to watch a fall like that if there is any risk of one of it. It does not, as a rule, come away immediately—at least that is not my experience of falls—and there is generally time to get men out there it began to work. I have known ground to work for days, and so, I suppose, have most of you.

17358 Q And sometimes it comes over suddenly. You cannot stop the men in the expectation of a fall taking place that may not take place for six months? A I believe it would be better so. The ground may work, but I can hardly understand its working like that for six months.

17359.



- 17899 Q It may not work; it may stand up for six months! A That is not my experience; and I have seen a lot of fall.
- 17900 Q But I presume you have seen ground stand up for a long time? A Yes, I have seen ground stand for years, and there were no signs of its falling at all.
- 17901 Q Would you stop the colliery in such a case? A No, I say there should be a proper system of patrol.
- 17902 Q Then you would patrol for years? A Certainly, why should not a man be kept to look after a good like that, if necessary. Better that than a disaster at any time.
- 17903 Mr. Lyngby. Q If Mr. Hansen, a fall had taken place 2½ feet high in that 25-acre gash, what should have been done? A That is 2½ feet thick of it coming away at one end—that is no indication of its working, certainly.
- 17904 Q And what should then have been done by the management? A It should have been watched to see if any more was taking, and if there were any symptoms of it, the men should have been withdrawn.
- 17905 Q Well, in the Hæskeln case, 2½ feet of that roof had fallen at the edge of the gash, according to the examining doctor, a week before the disaster. Should all the men have been withdrawn on the inside side of that gash until the fall was completed? A Not necessarily so. It should have been watched, though, very closely.
- 17906 Q Both a fall having taken place, there was always the possibility of a much larger fall, with the possibility of forcing out a considerable gas? A Certainly.
- 17907 Mr. Lyngby. Q If you know of the existence of gas? A If you know of it, of course, but, unless it was possible to examine the gash, it would not be possible to know whether the gas was existing or not.
- 17908 Mr. Lyngby. Q But it would be possible to examine the gash with a fall of only 2½ feet? A That would depend upon circumstances. A man would not always travel a gash of that extent over the top of a fall, without he is sure that the roof is steady.
- 17909 Q But when black damp was discovered at the edge of the gash after the fall, what should have been done? A I do not know what he could do, except report it, and try to get it covered off, I suppose.
- 17910 Q In such a case should the men have been withdrawn? A Yes.
- 17911 Mr. Bruce Smith. Q You might tell how much there was, an infernal quantity.
- 17912 Mr. Lyngby. Q Then you do not see the necessity, in the case of an intake airway passing a gash, of having the gash sealed off against that intake airway so that the air cannot possibly leak through the fall? A Certainly it was serving all then, on that side.
- 17913 Q But you would leave it to be watched by a return airway, or by an independent air shaft? A Yes.
- 17914 Recommendation No. 5.—All pillars, excepting supporting pillars, to have cut through not more than 30 yards apart? A Yes, I was always in favor of them cut through. Before the 1894 Act was passed, I think we recommended from our district 30-yard cut-throughs.
- 17915 Q Have you ever read of a crop through having the pillars too small in this State? A Oh, yes, plenty of crops.
- 17916 Q Can you say what were the sizes of the pillars in the crop you have in your mind? A I think they were 4 yards to 4½ yards—4 yard pillars by 25 yards long, or thereabouts.
- 17917 Mr. Webb. Q Is that the Hæskeln case you are speaking of now? A No. Well, of course, for that matter.
- 17918 Mr. Lyngby. Q What was the size of the pillars at Withford where the crop took place? A They were 4 yard pillars, by 25 yards, I think.
- 17919 Q What was the cause of that crop? A The place there had stood something like twenty-five or twenty-six years, and had no pillars at all, and the ground workings got back, and they started to make the pillars out. It was quite evident that there had been just enough roof left in to carry the roof, because, almost immediately they started to take the pillars out, the started to work, and ran over the lot of them. That is what happened.
- 17920 Q And at the Hæskeln Pit what was the size of the pillars? A Thirty-five yards, by 4, I think.
- 17921 Q And was the fall there through the removal of those small pillars? A Exactly the same conditions—as soon as they started to remove the pillars the ground started to work, and she started over the lot.
- 17922 Q Are there the only two instances you have in your mind of crops through having the small pillars? A No, there have been crops in almost all the mines in the Newcastle district, through the same fault. I mention more than one crop in Lambton over thirty years ago, where the pillars were not disturbed at all.
- 17923 Q However, all three were under practically the same conditions? A Yes, a 4 yard pillar was the only pillar left in those days.
- 17924 Q Do these crops of all kind upon the suggestion of having cut through every 30 yards? A No, I do not see how that has anything to do with it.
- 17925 Q It has been suggested that there is a danger of crops if the cut-throughs are every 30 yards. What do you say upon that? A That, if there is any doubt about it, they can leave another yard or two on the pillars, and make up the difference.
- 17926 Q In your experience, with your practical knowledge, do you think that there is any danger of a crop through having cut-throughs every 35 yards? A No, I do not think so; if the pillars are left large enough, I do not see how it can weaken them worth talking about.
- 17927 Q Then these crops that you have mentioned are not, in any sense, an argument against the recommendation? A No.
- 17928 Q The conditions were such as to be altogether different from the conditions which the recommendation suggests?
- 17929 Mr. Bruce Smith. Q He has not said a word about the conditions. That is entirely your own opinion, which you are asking him to assent to.
- 17930 Mr. Lyngby. Q I am sure, are the conditions altogether different?
- 17931 Mr. Bruce. Q Mr. Bruce Smith objects to that, Mr. Lyngby.



Witness, D. Sweet, 18 February, 1903.

17992. Mr. Lyngby. [It is a natural deduction which is quite clear in everybody else but Mr. Bruce Smith, 17992. Mr. Howe.] I have very often said, Mr. Lyngby, that conditions which are led up to in this way really mean with very little weight to any Creek.

17994. Mr. Lyngby. I appreciate that.

17995. Mr. Howe. [Whether evidence which is given by a witness of his own motion has the full effect which the witness desires, due to his knowledge and integrity, deserves.]

17996. Mr. Lyngby. Yes, Your Honor.

17997. Q. I ask are the conditions which you mention when the crabs took place altogether different from the conditions which would exist if the crabs were every 10 yards?

17998. Mr. Howe. [That is really the same.]

17999. Mr. Lyngby. [He has never really mentioned any conditions at all.]

18000. Mr. Howe. [The witness was speaking about pillars of a certain size. That, I understand, is the only condition which he has mentioned which distinguishes these crabs from other crabs where the pillars are of a different size.]

18001. Mr. Lyngby. [In your opinion, what is the largest size of pillars requisite for all safety purposes?] A. That would depend upon the thickness of the strata above the mine.

18002. Mr. Howe. [That is put it.]

18003. Witness. [I am fix it for you, at the present time. Taking the last Walwood crew, and how they work now with 4 yard pillars, it is lessening the ground at the surface now, where they are reduced, without any work at all, under 400 or 500 feet of strata, and in the particular case that I referred to, where the 4 yard pillars were left, it was not above 300 feet thick, but the pillars would not carry it. That is taking Walwood alone into consideration, but the same thing applies all over the northern district, in taking They have all larger pillars than they had forty years ago—more than double the thickness, and today they are carrying the ground very well so far.]

18004. Mr. Lyngby. Q. Do you know of any colliery in the north, where, in your opinion, it would be sound to have no pillars every 10 yards? A. I do not. I believe myself that it would be benefited in some cases.

18005. Q. Have you been in nearly every colliery in the north? A. I have been through every working colliery in the northern district, with the exception of one only.

18006. Mr. Lyngby. Then, would the reducing of our pillars every 10 yards, in your opinion, at all interfere with the safety of the mine in any respect? A. I do not think so, I do not see how it could possibly do so.

18007. Q. What do you think as the advantage of these 10-yard pillars every 10 yards? A. In the first place it would assist in the extraction of the pillars, when they are going to be taken out; and it would certainly assist the condition, in the respect of not having to carry too much as far as any experience of any kind is concerned, it is especially excited, that it does not carry very rapidly—it carries the air in the face.

18008. Q. In your experience, has the breathing been done in a way that would carry the air in the face?

A. When it is carried in a such manner way, but this happens to be the case, that the men have not the time to put it up on the most suitable principles, that is to make it perfectly upright. It is nothing like that.

18009. Q. It is being air from the time the breather enters it till it gets to the face. There are good men who do place in the northern district today where it is even doubtful whether the air is conveyed with at all, because you could get a high island every breather, and you would not find the right directed a bit, especially when you are up to the do about to get over out through.

18010. Q. You might tell me what is the largest do you know of in the Newcastle district without a set through?

A. I think Swinley is the only place I know where they are doing 10 yards, and my experience of that is that that I find, where these crabs were worked, the temperature is considerably higher perhaps a couple of degrees, than where the crabs were not done. That is my experience, and that is what I told the Manager at Swinley, too.

18011. Q. And do you know whether that defect has been remedied by putting in the set-through?

A. Not that I am aware of. They still maintain a certain number of 70 yards here.

18012. Q. Is it addition to the long bit, what do you say about the air that are not that passing there?

A. The breather is being air all the way, the force of it is much less effective than it would be if the set-through were only 50 yards further back.

18013. Mr. Lyngby. [Mr. Howe did not say the pillars were left, Mr. Lyngby, he said the temperature was two degrees higher.]

18014. Mr. Lyngby. Q. Did you mean to say that the temperature was hot in those places? A. I mean to say that the temperature had increased perhaps a couple of degrees more than I would find in places situated where the set-throughs were not so far apart. I do not say they were necessarily hot.

18015. Q. Mr. Howe, the Commission object to the use of adjectives. The place were not necessarily hot, but were they hot, or not, in a mining sense, would consider a place hot? A. I consider that the distance those levels were driven had a tendency to increase the temperature.

18016. Mr. Lyngby. [Q. Can you state the ground temperature of the mine? A. I think it is about 74.]

18017. Q. The ground temperature of the mine? A. The general temperature runs about 73 to 74, that is, at a distance away from the go bottom, generally speaking about the working place.

18018. Q. Then it is very much lower than the temperature at present on the surface? A. Yes. Naturally you would expect that, you do not suppose you could work in a coal mine with the temperature as high as it is on the surface.

18019. Q. They have to in many places? Q. I do not think so. You could not stand 70 in the shade down below, very well.

18020. Mr. Lyngby. Q. I want to know whether in your opinion, in a mining sense, those places could be called hot that they had driven 10 yards without a set-through? A. By comparison with the normal temperature of the mine, they were hotter than they would have been if the set-throughs had been 20 yards apart.

18021. Mr. Lyngby. [Mr. Howe said a few minutes ago that they were not hot, Mr. Lyngby. He said they were two degrees higher in temperature.]

18022. [Witness.] What I mean to convey by that is that it has a tendency to increase the temperature of the air current if the set-throughs are 10 yards apart.

18022.



17122 Mr. Lusk. Q Now, recommendation No. 2.—"Inspection with sealed safety lamp in all places." That, I believe, is pretty well in practice in the Newcastle district? A Except in places where gas has never been reported. I believe in some places they make inspection with the sealed lights yet.

17123 Q In your opinion, do you think they ought to make inspections with the safety? A Certainly, I see no objection to it at all.

17124 Q For approval of the recommendation? A Yes; that an inspection should be made with the sealed safety lamp.

17125 Q Recommendation No. 7.—"Monthly examinations and report by deputies and District Inspector with hydrogen flame." A I would like to hear what you have to say on that. A I have had very little experience with the hydrogen flame myself. Of course I have been among the Government Inspectors, and seen it used, and I have been among the Managers, and seen it used, I have never used it myself, but it is certainly the most careful kind of lamp to use and the source of gas that it is the one, that is, for small quantities, at any rate.

17126 Q Do you think the monthly examination would be practicable, and not too expensive? A I do not see why the main source of the safety would not be tested with it every day for that matter. If there is one place where it could be used as well be used for that purpose as anything else. It is not much trouble to go into the main returns and test these.

17127 Q It has been suggested that it is a very dangerous lamp to handle? A I have never had any experience of it. I do not see why it should be. They seem to handle it all right.

17128 Q You have seen it used by Managers? A I have had railway managers with me using it, and I have been along with Mr. Hunkle when he has used it, and I have been along with Mr. Tinsman, when he was underground at Newcastle, when he was using it.

17129 Mr. Sublette. Q Are you aware that also gas which is contained in the cylinder is at an enormous pressure? A I heard so, something about 180 lbs. in the square inch.

17130 Q And do not you think it is a very dangerous lamp to take into an explosive atmosphere? A If it burst it would be, certainly.

17131 Q If you had control of the valve and gas at the pressure of 1,280 lbs. the square inch should cause the flame, you might recommend the flame of the lamp to the gas in the mine, if you were testing in an explosive atmosphere? A It is a very reasonable way to put it. It is possible it might happen. It is also possible that the glass of an ordinary safety lamp might get broken by accident.

17132 Q But the glass of the hydrogen lamp? A Yes, that is true. That danger is present with the hydrogen lamp as well as with the safety lamp.

17133 Q And the hydrogen cylinder containing gas at a very high pressure is only an additional danger, the hydrogen contained in a cylinder at the maximum pressure of 1,280 lbs. the square inch is an additional danger as compared with the ordinary safety lamp? A It is very satisfactory to know what the current of air is carrying to you.

17134 Q Yes, I know, but the point I wish to show you is that the hydrogen lamp is not a lamp to be taken into any place where you expect to meet with an explosive mixture? A If it is right for the Government Inspectors to take them in mine, as they do, where the mine is at work, why is not it right for the Managers or other managers to test the return air regularly?

17135 Q How often do not take it into a place where they know there is an explosive mixture? A Well, I question whether they know all they go in. Because I have been in with them in mines where there was a half per cent.

17136 Q At all events it is not a lamp to be taken into a place where there is an explosive mixture of gas? A I could not say that, because any safety lamp at all is in the mine predominant, because something may happen, and it may set an explosive mixture off.

17137 Q But the ordinary safety lamp has not a cylinder containing gas at a pressure of 1,280 lbs. in the square inch? A But that cylinder, I suppose, is tested to every the stress.

17138 Q But I am suggesting to you the possibility of having control of the valve, and the gas flowing from the cylinder to make an effort to carry the flame of the lamp to the outside atmosphere? A I see. The mine lamp ought to carry everything connected with mining. There are always water/works all the time, and no one knows that better than you.

17139 Mr. Sublette. Q But would it not do if that lamp were used only where the ordinary safety lamp could not detect gas? A I see no objection to that.

17140 Q There would be no use in using a lamp as sensitive as the hydrogen lamp when you could detect the gas with the ordinary safety lamp? A That is so.

17141 Q It should only be used when you could not discover gas by the ordinary safety lamp.

17142 Mr. Lusk. Q I might say that the recommendation does not intend to apply in a place where gas could be found with the ordinary safety lamp. I never anticipated that a modification would be put upon this that was necessarily stated. It was merely, I thought, that the suggestion was that the hydrogen lamp should be used for the purpose of discovering whether a mine was giving off a percentage of gas less than 25 per cent. If it could be found with the ordinary safety lamp, it would not be necessary, and I did not suggest that the hydrogen flame should be used.

17143 Mr. Sublette. Q But if you are to find out whether a mine is giving off gas at a percentage less than 25 you must test it with the hydrogen lamp.

17144 Mr. Lusk. Q Yes. If it is discovered that the mine is giving off 25 per cent, which can be found with the ordinary safety lamp, there is therefore no necessity to use the hydrogen lamp. But if gas has never been discovered to be given off in the mine to the extent of 25 per cent, when it is necessary to use the hydrogen lamp to see whether the mine is giving off any gas at all.

17145 Mr. West. Q Then you would require it to go round and examine the mine twice?

17146 Mr. Lusk. A No.

17147 Mr. Sublette. I take the case of Example where I understood gas cannot be discovered with the ordinary safety lamp; that is to say 25 per cent. I presume, under your suggestion, the hydrogen lamp would have to be taken all through the mine, from end to end.

17148 Mr. Lusk. A But, to it, before the disaster, gas had not been discovered with the safety lamp, if the hydrogen lamp had been used it would have been found also it was being given off in some places under 25 per cent, and then steps could have been taken to meet the danger.



- 17548 Mr. Johnston. I did not understand that there was any limitation in this second resolution.
- 17549 Mr. Lyngby. It was never intended to recommend that the hydrogen lamp should be used where gas could be discovered with the ordinary safety lamp. With regard to the shipment of Mr. Bruce Smith as to going around testing the mine it is suggested every morning with the ordinary safety lamp, and, if gas is discovered with that, then there is no necessity for the hydrogen lamp to be used.
- 17550 Mr. Bruce Smith. But on every day that no gas was discovered with the ordinary safety lamp a fresh examination would have to be made with the hydrogen lamp.
- 17551 Mr. Lyngby. But you suggest that it should be made monthly, Mr. Lyngby.
- 17552 Mr. Johnston. Under this proposal every mine in the district would have to be examined from end to end with the hydrogen lamp.
- 17553 Mr. Lyngby. No. I understood that every mine in the district would not have to be examined with the hydrogen lamp, because in the majority of the mines in the Humber district, inflammable gas has been discovered above with the safety lamp. The annual report shows that gas has been discovered at Mount Pleasant, Bally and Kema. The necessity for the adoption of this recommendation is emphasized by the Earl's disaster, from the fact that the hydrogen lamp, in various workings, detected a percentage of gas under 2½ per cent, when the safety lamp did not detect, and this percentage is a danger which should be known, and would be known in the future if this recommendation were adopted.
- 17554 Q Mr. Moore, for the word "Deputies" I would substitute the words "Miners, or Under Miners", because, in case of the ways deputies are appointed, there may be a danger of an incompetent person getting hold of the hydrogen lamp. A Yes. My committee took this view of it, that it was only meant to put it in the mine.
- 17555 Mr. Johnston. A very sensible view to take, I think.
- 17556 Witness (continuing). And then it did not come going into every working place with the hydrogen lamp, but that it simply meant to find out what the ordinary safety lamp would not find out—that is, what amount of gas the mine was giving off.
- 17557 Mr. Lyngby. I put it before the Com. as from the Humber Union, that a monthly inspection should be made with the hydrogen lamp where 2½ per cent. has not been discovered with the safety lamp. It is not unlike it, at from the Humber Union, is a more inspection of the return airway, because I can see that a slight leaky mine from that.
- 17558 Q In a new mine where the face, being freshly opened, give off a percentage of gas under 2½ per cent, a few days after its construction was made, with the hydrogen lamp of the return airway, it would be apparent to you that the examination of the return airway with the hydrogen lamp would give an indication of the danger arising from this newly opened place giving off under 2½ per cent. A It is a new face where gas is giving off that quantity, it would show, by testing as the face, a good deal over 2½ per cent, if there were 2 per cent. in the return some distance back from the face. I have myself seen the hydrogen lamp detect 2 per cent. immediately at the face, where it would not have detected any in the airway. It was previously a mine.
- [At 1 p.m. the Committee adjourned until 2 p.m.]
- ANNEXURE
- [On returning at 2 p.m., Mr. W. S. Frost attended to take shorthand notes of the evidence and proceedings.]
- WILLIAM DOWER, previously sworn, was further examined, as under—
- 17560 Mr. Lyngby. Q We were speaking about the use of the hydrogen lamp under what conditions do you think it should be used? A I think, as I said before, that it could be used to find out what amount of gas there is in the general atmosphere. It may happen that a number of faces of coal are giving off gas which cannot be detected by the ordinary safety lamp. The hydrogen lamp might be used to find out what amount of gas there is in the atmosphere in their workings. Suppose, for instance, there were half a dozen places each giving off an amount of gas, but not gas enough to be found by the ordinary safety lamp, then the hydrogen lamp might be used to find the amount of this gas, because in the return airway the gas might be detected in an amount to make it dangerous.
- 17561 Mr. Johnston. Q If you would not find the gas with the ordinary safety lamp, you would use the hydrogen lamp? A I think that to be the meaning of the recommendation.
- 17562 Mr. Lyngby. Q How do you know that the face are giving off gas? A It is not hard to detect whether a face is giving off gas. A man may not find the gas so far as his lamp is concerned, but if you applied a light to it, you would get flame.
- 17563 Mr. Johnston. Q There are places where you would not detect gas with a safety lamp, but, at the same time, you could light it.
- 17564 Mr. Lyngby. Q Would you have the hydrogen lamp used only in the return airway, or would you have it in other parts of the mine where there may be an accumulation of gas under 2½ per cent. I would not call it an accumulation of gas, the atmosphere may be created by 2 per cent, and yet the ordinary lamp may not detect it. When it travels back, it may get diluted with the ordinary air and you can no longer notice it at all.
- 17565 Q Is it not possible that there may be danger from the gas, although you might not be able to detect it in the return airway? A It may be that a safety lamp given off gas. It is possible that the atmosphere may become so bad that it may not be noticeable in the return airway, if there is 2 per cent of gas in a place, and it is not all diluted, it would be possible for an explosion to result.
- 17566 Q And that 2 per cent. would not be shown by the ordinary safety lamp? A No.
- 17567 Mr. Johnston. Q Do you not think that the hydrogen lamp might be used in abandoned workings, where the mine returns of air is not travelling on in the working places? A In such a place as that you would find an accumulation of gas. If we put gas in it, it might get a pressure, but if the air was travelling through it, I do not think you would find an accumulation.
- 17568 Q The air in an abandoned working may not be sufficient to reduce the gas to a non-explosive quantity? A The hydrogen lamp would show what percentage of gas there was there.



12168 Q The gas might be reduced to 2 per cent, or to 1; per cent, which amount could not be detected by the ordinary safety lamp? A The hydrogen lamp would be very useful in a case of that kind.  
12169 Q Will you advocate that abandoned workings should be examined periodically—say monthly—with the hydrogen lamp? A Yes.

12170 Q And in the case of gales which have not fallen, would you advocate that they should be periodically examined with the hydrogen lamp? A I have no objection to that.

12171 Q Apart from your objection to it, would you advocate that it should be done? A Much of the mines have these lamps, and it is only a question of using them.

12172 Mr. Lyngbalt I We now come to Recommendation No. 8, which is—“Discharge of 500 cubic feet of air per minute to be provided for every horse, instead of 100 as at present.” To this the Newcastle Board has added the following:—“Not less than 200 cubic feet of air per minute for each man and boy.” What do you say to that recommendation? A I think it would be a very useful provision indeed. There are some instances where it may not be necessary, but in all cases now 200 feet of air is quite enough, and it is scarcely little enough in any case. I do not think it is too much to ask. In fact, the best means of the Colony supply that amount of air now, and some. But in some of the mines the air now is still very bad.

12173 Q Where the maximum amount of air under the Act is supplied, do you think it is insufficient? A Generally speaking, it is.

12174 Q You think that ought to be increased to 200 feet for every man and boy, and to 500 feet for every horse? A Yes.

12175 Q Recommendations Nos. 9 and 10 relate to the position of doors, and read—“All doors erected as to close and remain closed of their own motion. Double doors on drives, as between main shafts and returns, and main headings.” Are there any objections to that? A No.

12176 Q What have you to say to that matter? A I say that it is necessary. I do not know that I can call it anything else but, whether on the part of those persons who hang doors which are not self-closing, but in many cases there are such doors. It is not more trouble to hang a self-closing door than it is to hang one that will not close. Double doors are necessary, an open door will short-circuit the current. You can tell when you are measuring the air in a mine whether there is a door open or not. I have noticed it frequently.

12177 Q In the Kermia mine it is stated that the intake air depended upon at least four single doors. What is your opinion about that as far as management is concerned?—

12178 Mr. Hewitt I Is that a fair question to put to the witness? It is not the only matter on which the air depends, it depends on a lot of other things. It depends, for instance, on a man going round daily to see whether the doors were closed.

12179 Mr. Hewitt I Suppose other things, as a primary condition, we have the fact that the air in the Kermia mine depended on the closing and on their being closed, of four single doors. That is what Mr. Lyngbalt is asking about, and I do not see that it is not a proper question. Mr. Lyngbalt says that the air current depended on these doors, the air current depended on other things as well. The questions of other persons do not affect the question whether the question put by Mr. Lyngbalt is proper or improper.

12180 Mr. Hewitt I There may be some defect connected with a double door.

12181 Mr. Hewitt I You may take the case of where a machine is allowed to have an enormous amount of pressure dependent upon its being let fully properly. Even if you have two machines they might fall, but there is a difference between one machine and two machines. In some cases machines only to keep one machine, but then both may fail. But, with regard to this matter, it is admitted that it is a proper thing to have double doors under certain circumstances.

12182 Mr. Lyngbalt I I want to get from the witness an impression of opinion that it is not impossible to have only single doors.

12183 Mr. Hewitt I That would not help the Commission very much—he has already said that double doors are essential.

12184 Mr. Hewitt I I would make it compulsory that there should be what we call a trigger at the door second doors are said by witnesses. When a wheelman is in a door, he puts it open, until he gets his trigger through, and then, there may be a short stretch of air for several minutes at a time.

12185 Mr. Lyngbalt I You would not have risk if there were double doors? A But if they were for enough apart, I think it should be made compulsory to have triggers. A wheelman is a most ungainly animal—I have been one myself. He goes a door open, and goes away and leaves it open.

12186 Mr. Hewitt I I think it that the object of having double doors is that they need not both be open at once? A That is what is wanted.

12187 Q They would be wide enough apart to enable a wheelman to get through, and for one door to close before the other is open? A Yes. And it is necessary that they should have triggers.

12188 Mr. Lyngbalt I Recommendation No. 11 says—“Weekly measurements of air in each system, and report thereof to be sent to the Inspector—” which your dissent has added the words “instead of monthly, as at present.” Do you approve of a weekly measurement? A Yes.

12189 Q Why? A Well, the measurement of the air is where it is most useful, and sometimes I take it twice or four times.

12190 Q Where do you take on the surface or from offside? A I usually try my lamp immediately behind the battery.

12191 Q The evidence is that the management take the air in the shaft? A I do that myself, but I always like to see that the air is correct in the face. I take it there or four times, in order to get the average. It does not matter what the amount of air travelling may be, but the question is, what amount the men are getting at the face.

12192 Mr. Lyngbalt I How can you measure it at the face? A By the deflection of the lamp, or by going up some shaft in one which way the current is moving. If you have a red light at the face, and the flame is deflected, you can easily judge of the air.

12193 Q You say told by the deflection of the light, or the shaking of the dust, whether the required quantity of air is there? A I judge by the temperature, and by my own senses, whether the air is there or not.



Witness—W. Brown, 26 February, 1922.

17195 Q You may be more sensitive yourself than others. Do you think that the detection of the light is a sufficient test? A I don't think you can make the current sufficiently to get an accelerometer to work, but it will only take a very small area. As a rule, I have been able to slip whether the air is circulating or not.

17196 Q As a rule, how far are the tests taken from the light? A I believe that the officials have specific places marked off where they take the air. I have found the places marked, and have taken the air at those places. If I am not satisfied I will take it again, and take it in the return passage. I find out how much air is wanted before it gets to the end, and I average the three measurements.

17197 Q To test your measurements, you take your measurement where they take them? A Yes, and I also take a measurement in the cut through.

17198 Q How far in your district, in the lower part, from the last? A In some cases it is 30 yards; in others it is close up—3 or 2 yards.

17199 Q Where it is 30 yards away it is satisfactory? A Not always.

17200 Q On you get any difference in such cases as that? A There has to be a good current if it does; but, generally speaking, it gives one. It has to be a strong current to strike the fan.

17201 Q It wants a strong current to travel 30 yards to the last? A I have had the air circulate at the fan, although the houses was 50 yards away from it.

17202 Q The air has to come back again? A Yes.

17203 Q Is it important to find it again at the fan and come back again? A If it gets to the fan it must come back again.

17204 Q The incoming and the outgoing air must travel in the same way? A Yes. You may get a pressure head in the outside airway, and that head is working with the glass well regulated, although without tension, but, in another place, it will not be regulated, because the current has to go round at right angles.

17205 Mr. Lytle? Q You suggest that the measurements should be taken as near the face as the accelerometer will permit, and not only at three stations? A I think that the measurement should be taken as close to the working face as the current travel. That is where it is wanted.

17206 Q In essence, do you think there would be any difficulty in having the measurements taken every week? A I do not think there should be any trouble.

17207 Q Now we come to the recommendation as to safety lamps. It is No. 12, and was followed:—  
"Rates supply of safety lamps and their regulation, equal to one-third of the number of persons employed below ground, to be kept constantly in good order and ready for use." The Chief Inspector has suggested that, in mines where open lamps are used, the supply should be equal to one-third of the number of the persons below ground, and where safety lamps are used underground, one-tenth of the number should be kept as a reserve supply.

17208 Mr. Bruce Smith? Tell the witness why the distinction is made.

17209 Mr. Lytle? The idea is that there should always be a reserve of safety lamps in a mine available for reserve parties, and, therefore, if there are safety lamps in use, there would be no necessity to have the same number of lamps, as a reserve, as if they were not in use. Do you think that is a sufficient number? or do you think that a greater proportion should be kept on the surface? A The Chief Inspector suggests that there should be one-third surplus on the case of open lights. Take the case of the Terrill Colliery, where they are working with a single shift, that would be only four lamps.

17210 Mr. Bruce Smith? Q That is correct? A They are using candle lights. There would be only four lamps. What would be the good of that in a mine which is going off gas?

17211 Mr. Lytle? Q You say that the mine is going off gas? A Yes.

17212 Q Does the Chief Inspector know that? A Yes. I think so.

17213 Q Has it been reported? A I suspect it has. It may or may not have been reported.

17214 Q Have you examined it? A Not as a check-inspector. At the instance of the owner I went down it, I found it going off a good deal of gas.

17215 Q You say that naked lights are being used there, and that there would be only four lamps in the case of an emergency? A Yes; and that would be too few.

17216 Mr. Robertson? Q Should there not be a minimum number of lamps kept at any time? A It depends how many lamps are kept. If a sufficient number is kept, you do not want a minimum or a maximum number.

17217 Q There should be a number of lamps kept? A There should be enough to supply any mine.

17218 Q A colliery employing twenty men would not require any reserve. Do you suggest that a certain minimum number of lamps should be kept? A Well, I happen to know that at that colliery the owner has 150 lamps now.

17219 Q Take that colliery, and suppose that the owner has not got any lamps. When do you say is a fair thing as to the minimum number of lamps to be kept? A I cannot say how many lamps should actually be kept, but in the case which I have mentioned the lamps would not be effective at all. Therefore I consider that there ought to be forty or fifty lamps available in a mine at all times.

17220 Q In any colliery? A Yes, in any colliery.

17221 Q But suppose you have only about ten men employed? A Well, if you put any minimum at all, a man might shelter himself under it, so long you say in many lamps for so many men.

17222 Mr. Bruce Smith? This is the proposal here.

17223 Mr. Robertson? Q The idea would be to have a certain proportion, or have a certain number and make that the standard minimum, but a mine employing five or six men would not require to have forty or fifty lamps kept in reserve? A There are mines like that, but the fact of the matter is that they might not be allowed to work.

17224 Mr. Lytle? Q The proposal by Mr. Lytle is that the supply of lamps should be equal to one-third of the number of persons below ground? A That would make six or seven in a mine like that I have mentioned.

17225 Mr. Robertson? I think the only way is to have an absolute minimum number at any colliery.

17226 Mr. Lytle? I think we ought to have a graduated scale according to the number of men employed.

17227 Mr. Robertson? How would it be to have a minimum number of thirty for any mine employing over twenty persons.

17228 Mr. Lytle? There appears to be a necessity for having a minimum number.

18029.



18009. *Mr. Lyngby* [Q] Would you have a machine similar equal to the number of persons employed, if such things are not being used? A It would be too much, would it not? It would come in the Walstead Colliery 500 lamps ready all the time.

18010. *Mr. Brown Smith* [A] This is not the place to settle the question.

18011. *Mr. Anderson* [A] We are only putting the matter in the witness.

18012. *Mr. Lyngby* [A] We want to see whether the witness will adopt the idea as to a machine.

18013. *Witness* [A] I would take the suggestion as a basis, and take twenty lamps for each hundred men employed. That may be a way out of the difficulty.

18014. *Mr. Brown* [Q] What would you do if a lot more than twenty men are employed? A You could start with a machine of twenty. Before that machine there may be enough lamps to do something with. The days are rapidly going past for a few months, then twenty men to be employed. I would wish it twenty in all cases. When a company is making a shaft, they will not work with less men; because they want to make it pay as soon as possible, and a man will never pay with less than twenty men. I think they should always have twenty lamps.

18015. *Mr. Lyngby* [Q] Re-examination No. 12 is—"Traveling and haulage roads, and other plants necessary to be properly watered." To this the Newcastle Union has added "All traveling, main, and haulage roads to be 6 feet high." From Lifford it is also suggested that there be added the words: "And properly sheltered and kept clear of any logs, and that any horse holes, and that the traveling roads be made not less than 6 feet high." What do you say as to the last part of that recommendation? A I am in favor of it. It is done now in some mines, and I think it ought to be done. The watering is done automatically, and there is no trouble attended to it.

18016. [Q] Are there many mines in the Newcastle district where automatic watering has been carried on? A Yes; and since the Kankia disaster a good many more have been added to their number.

18017. [Q] Prior to the Kankia disaster how many mines were there which, to your knowledge, were automatically watered in the traveling and haulage roads? A Several were doing it partially, but today they are doing it automatically.

18018. [Q] Had they appliances? A They used to water round about the traveling ways with ships and carts, but that did not water round the sides of the mine, and they have appliances now which do that.

18019. [Q] Did they, before the disaster, have appliances which watered round the sides? A The Dudley Colliery had a portion of the mine, and the Seaboard Colliery had gone last down, but had no water supply.

18020. [Q] In other mines where they water the roads, do I understand that the water was not allowed to run out of a hole in the bottom of the track, but that it ran all over the road? A Since the disaster they are adopting a better system of watering, but not before.

18021. [Q] Regarding the height of the traveling ways, and haulage roads? A We have an example of that in one of the most expensive mines, the Hiram Colliery. They carry it out there, and their shows that it can be done. The roads there were from 4 feet to 5 feet high, and they are breaking those up to 5 feet high—all the haulage roads, and the traveling road.

18022. [Q] Do you agree that the height of the traveling, main, and haulage roads should be 6 feet? A Yes. And I may say that, since that also has been carried out at the colliery I have mentioned it is one of the best collieries, and most efficiently equipped, in the district. It has been difficult to maintain, because it is an old mine with a large number of gulls about it, but the ventilation now is the best in the district.

18023. [Q] And do you agree that all the roads ought to be properly watered and kept clear of any logs that may have fallen? A That ought to follow as a matter of course. But I want to say again that the Hiram Colliery is one of the most perfect collieries in the district, as far as the water supply is concerned, because it carries it to the top of the road on the surface, but not maintaining that fact, and also the fact that they have a very hard rock, they are carrying out this breaking. In these cases it, every other colliery ought to be able to do it.

18024. *Mr. Brown* [Q] As far as you know the mine is a paying one? A Oh yes, it is paying. The owners do not run any colliery which would not pay.

18025. *Mr. Butler* [A] There are three other collieries there.

18026. *Mr. Anderson* [Q] You say that it can be done without expense? A No, but I say that it pays them to do it. The Seaboard and the West Walstead Collieries could have carried it out, and it would have been less difficult for them, with their room of coal, if they had done so.

18027. [Q] That 4 foot main of road in a thin section, is it not? A There are hundreds of acres ready now.

18028. [Q] With a 4 foot main breaking is indispensable? A Why?

18029. [Q] You could not work a 4 foot main for any distance without breaking. Can you work a horse in a 4 foot main? A You can get power in, as they are doing now at Walstead.

18030. [Q] At all events, this is a very thin case, and I take it that breaking is indispensable? A Yes.

18031. [Q] Having to break, the cost is not so much greater to break from 4 feet to 5 feet, than from 5 feet to 6 feet? A I think it would be in the case in my mind.

18032. [Q] At all events they have to break, and the extra cost of breaking 4 feet would not be very material? A And they have to break at West Walstead, but they are making good if they are compelled to break up higher.

18033. [Q] But you are getting a case where breaking cannot be done without? A And other mines cannot do without it.

18034. [Q] Do you mean to say that, if they had a 5 or 6 foot main in a mine, people would go to the trouble to break to 6 feet? A Probably they would.

18035. [Q] You do not think they would? A I do not know that they would.

18036. *Mr. Lyngby* [Q] Do you think that they should? A I think that they should, and I think that they would according to what I know of the Union.

18037. *Mr. Anderson* [A] That is all very well, but we want the evidence in pay. They are and run as best-directed institutions.

18038. *Mr. Lyngby* [Q] Re-examination No. 14 is—"That Managers should be compelled to give more personal time and attention to the management of the colliery." A I do not know very much about that. From what I have heard some of the men think that the Managers give too much attention to the colliery, and they are sometimes in the road.



Witness—Mr. Bates, 28 February, 1932

18009 Q What do you think would be a fair thing to demand of a Manager, with regard to visiting the underground workings? A I could not make any suggestion. I know, as a matter of fact, of one railway Manager who has himself had disputes through the time in the morning to see that they were doing their work. That might be considered an excess of zeal.

18010 A. Bates: Q Should a Manager devote a great deal of time to the underground workings? A I know of one Manager who makes it a practice to be away working here in the mine every fortnight, and has worked on a mine where I did not see the Manager for more than three or four days in the whole of the period I was there. I do not know whether he did his duty or not, but I did not see him at my place. I think a Manager would be a greater man if he did not keep himself posted up in all the work of the mine.

18011 Q You know that the Manager has higher qualifications than any one else about a mine, unless he has made him a first-class man. But he ought to be competent to see everything that is going on, and he ought to be compelled to give a certain amount of his time underground, and not leave the matter left to his own discretion—that is the question? A I think the Manager should visit the underground workings periodically—that is, often—in order to see every part of the mine.

18012 Q You value the importance of the Manager himself seeing the mine? A Yes.

18013 A. Bates: Q You have no reason to believe that they do otherwise? A I cannot give a reason.

18014 Q You suggest that the Managers have something more to do than to keep round the underground workings? A Yes, but there are some of them who could not spare time once a fortnight to visit the mine.

18015 A. Bates: Q I gather, then, that you think that the Manager should, at least once a fortnight, visit the underground workings? A I think that they should see the whole of the mine at least once a fortnight, but it would take the Manager more than one day in the fortnight.

18016 A. Bates: Q Supposing that was impracticable, unless the Manager devoted the whole of his time to visiting round the mine? A I have never struck a mine of that size yet.

18017 Q I will show you one to examine, and I will give you a fortnight to do it, so. Do you mean the working itself? A I mean that the Manager should see all the working here at least once a fortnight.

18018 Q Do you not think it sufficient to visit the mine, if the Manager is more or less in the mine every day? You would not put him down to go into every place in the pit? A He would be more than able to see them every fortnight.

18019 Q There are many things which a Manager might not see in a large mine? A Well, the Manager might only see at the top, and with some of them, if they did so, you could find that they were there at the furthest part of the mine. With regard to this, it does not matter whether they are above or below ground.

18020 Q Then they have no control over the officials at the mine? A Well, you do not find it. There is a man attached to one mine in the Newcastle district that whenever he goes into the mine something is sure to happen. He knows it is a good thing to have a reliable staff, but all the same, a staff is worth looking after, just as in the case of the Manager, whom I have mentioned, who followed his Captain round, and discharged two of them for taking money as a manager.

18021 A. Bates: Q What do you mean by saying that when a certain Manager went into a mine something would happen, do you mean that no accident would happen? A Something of the kind. They used to say that. It was a sort of custom.

18022 Q With regard to Recommendation No. 12, which relates to underground being placed at the bottom of the report, I will not trouble about it, but Recommendation No. 15 is that—"The use of the machines should be enlarged." The Director (later) desires to add that they shall be "Set in the 4 feet high, 4 feet deep, and 4 feet wide, and to be white-washed." What have you to say in support of that? A The reason for having enlarged machines is that, when half a dozen or a dozen men are going along the travelling road, they may all rush for one hole, and the men cannot get on. The recommendation, so to the place being interested is so that they may be visible because accidents have been put there. It is really wonderful the accidents which do not come of machines.

18023 A. Bates: Q Would you have lanterns put? A No, do not want that. If the Walls would go down the pit, and try to find one of these machines, he might find that he had missed a down. There are plenty of men which remember that last, and that do not search the machines, but there are others who do not. I know the difference of trying to find a machine which is white-washed and one which is not.

18024 A. Bates: Q That is really only an accessory in the travelling roads which are used as haulage roads? A It would only be necessary for haulage roads such as travelling roads. Where the haulage road is not so used, it would not be necessary.

18025 Q You know the difference between an engine rope and the main and tail rope? A Yes.

18026 Q With the engine rope there is only one used for machines? A Yes, I was told you of a mine where the engine rope broke with something like two or three hundred steps as it, and it was a wonder how the men got out of the way.

18027 Q That is an extraordinary occurrence? A It is not often that engine ropes break in that way, or that they are fitted to be so useful such as this was.

18028 Q Would you have the recommendations with regard to increasing the use of machines, to haulage roads, where the main and tail rope systems are used? A Yes, I think a man could always get out of the way of the engine ropes.

18029 Q The speed of the engine rope is only from one to two miles an hour. And that is not dangerous, because a man could walk in front of it? A Yes. But I should remark upon the machines being spaced with intervals. That is not much risk, and I think it is necessary.

18030 Q On the haulage road only? A On the haulage road only.

18031 A. Bates: Q Recommendation No. 16 has reference to the maintenance of employees regularly on the means of escape. Do the Newcastle district desire to add the following—"And that proper machinery is kept at the second shaft, and to lift all employees to the surface within one hour." The League has decided to add the following words—"That all rescue shafts be properly equipped with means to draw men in case of accident, and proper means of signalling be also fitted." What have you to say to that? A With reference to the first part, it is carried out now in some mines. It is necessary that the men should have the means and the best ways out of anything arises.

18032



18082 Q What is carried out? A Is some more the men are taken out by alternative roads—by the second order—so that in case of anything happening they need not go on by the good road. I think this should be made compulsory. I think that every man working in a mine should know all the routes.

18083 Q Where is it that the men are taken out in this manner? A They are taken out, or away each day, by the deputy. I know it is usually done at Monkton. And I think that the men take it like a dose of physic—they do not like it. They have to think a long time at the start.

18084 Q Has it been found preferable to do it at Monkton? A Yes.

18085 Mr. Johnston Q Does the deputy only take out some of the men? A The deputy takes out so many men each night, could he wait that should not.

18086 Q The difficulty suggests itself that, in an alternative mine, where there are a large number of alternative roads, it would take a long time—it might take weeks—to show the men a different way out. It was proposed by a witness here yesterday that, instead of the men being taken out in this manner, the different routes should be shown each day, so that the men would know the direction in which to go to find their way out of the shaft? A That is done at some places now.

18087 Q Would that not be a sufficient substitute for showing the men the different routes, where the mine is very extensive, and where there might be some difficulty in getting the men to other exits? A The idea is a very good alternative, if it is carried out thoroughly, because you can easily guide men by white-wash signs to go anywhere.

18088 Q In a large mine the men might forget the route which they have been taught, but with the corners of the road whitewashed every man would find his way out? A It would do so in an alternative.

18089 Q You have no objection to it? A I have found my way out in that way in the Western Colliery, where they have this travelling road marked in that way. There are marks on the road, and women elsewhere. I think that would do as an alternative, supplemented as it is by the evidence that the men do not like kindly to being shown the way out.

18090 Mr. Johnston W Well, here it is said that the men refuse like this, and that they consider that each other to be shown the way out.

18091 Mr. Lyngdale Q Do you put that in a substance to the recommendation that has been made, or as an addition? A I would put it as an alternative. I would put both proposed in, and let it be optional.

18092 Q Why not have both systems? A I would leave it optional.

18093 Q In collieries where the travelling roads are marked, are not the men also shown the way out? A Yes.

18094 Q You approve of the suggestion—fully, that the road out should be marked in the way suggested, and also that the men should prefer it to get general instructions on the way out.

18095 Mr. Johnston I do not think so and that.

18096 Mr. Lyngdale I am trying to carry the witness further than you did.

18097 Mr. Johnston Now you are asking two things. The witness was willing to accept the white-washing proposed as an alternative.

18098 W Well, if the men are agreeable to go a different way out, why can send the deputy with them? Mr. Lyngdale said that they do not object. I say that if the men do not take kindly to being shown any way out of a mine, then you would have the travelling ways marked with white-wash, and the other ways marked off, so that the men could find it themselves if necessary. The reason why it should be made compulsory to have either way.

18099 Mr. Johnston Q We want it carried out. But you would not make it compulsory? A I think you would find a difficulty in making it compulsory.

18100 Mr. Lyngdale Q What about the proposal that general machinery should be kept at the second shaft outlet, to lift all the employees to the surface within one hour? A It might be undesirable in some cases. In the second shaft in some mines it might take four or five hours to get all the men up. We had a case at Worsfold to that effect. I have the had experience of the matter myself. It took so long that to get the engine driven to answer the signal after we got on the cage. That was at Barton Colliery. But I went to a neighbouring colliery, and four minutes after we signalled we were down again. That was at Withams and Bellock Island. Is a good many collieries there are difficulty in getting the machinery to work at the second shaft.

18101 Mr. Johnston Q Do you mean that they should have the machinery ready, and that they should have steam up? A After they have steam up, the machinery may be inadequate and not do the work.

18102 Q What was the difficulty? A The actual hoisting machinery was too slow and too light, the cage was too small, and there was some trouble to get those men into it. I thought that we were going to the old mine, and should never get to the top of the mine.

18103 Q Was that Worsfold? A Yes.

18104 Mr. Lyngdale Q Recommendation No. 15 is—"Each Miner Act to be fitted a black list of employees being kept, and providing the appropriate portions of discharged persons, showing employment." Have you anything to say with regard to that matter? A It is a fact that men get discharged for various things, and when they have been discharged there is usually any prospect of their getting work again in the same district. I know a considerable number of men of that kind. In the Newcastle district there are twenty or thirty men under the ban of being rehired. At South Greta they formed a Lodge, and the secretary and his four men were discharged, and also the chairman—and, strange to say, most of the men. The Manager said that he wanted to shorten his life, but that is a case way of shortening his life. I had a man travelling with me at Barton who was discharged because the report he sent in was too strong, he was discharged simply because he did his duty.

18105 Mr. Johnston Q Was that a check imposed? A Yes. We organized the Union at East Greta. We agreed that, if had reforms in three others and right conditions, the mine was supposed to be back. It was a Saturday night when they took office, and on the Monday they were asked, but we got them reinstated.

18106 Mr. Webb Q What was the outcome? A The return was palpable. They were officers of a Lodge.

18107 Q Was there not a serious agreement on that point not to join any Newcastle Union? A What do you mean?

18108 Mr. Lyngdale Q Well they signed a contract not to join any Newcastle Union? A I never saw that contract.



18708. Mr. Wade.] Q Did the Manager give that as a reason? A He did not give it to me. I had those put on again, and I brought about an arbitration case which we are about settling. At my suggestion the matter was referred to arbitration.

18710. Mr. Wade.] Q Do I understand that there are some of these men travelling round the district now trying to obtain employment? A Yes, there are men travelling over looking for work, but I do not think they will get it.

18711. Q Is it the South Grist Mill that you refer to? A It is the South Grist Mill I was speaking about.

18712. Mr. Robertson.] Q How will legislation help you? A It is difficult to say. We never see your black list.

18713. Q You are assuming now that there is a black list? A Well, it is strange, if a man gets discharged, that he never gets work again.

18714. Q How can you have me to employ you? A I am only looking about the matter—just looking to it. I am not suggesting any way out of the difficulty.

18715. Q You are recommending that legislation should be framed to prevent the punishing of discharged persons who desire to obtain employment? A I suppose that I have the names of a dozen men who are in that position now.

18716. Q I know of this by report, but how is legislation going to find you employment if I do not wish to employ you? A I do not think you would employ anyone if you did not wish to do so, and if we put anything in the law a Manager might evade it.

18717. Q It is unnecessary to keep a black list of discharged persons; there can be a black list in a man's mind? A Yes.

18718. Q How can legislation prevent that? A I do not see how it can. I am thoroughly broken. At the same time there is no harm in referring to it. There is no doubt it is common knowledge that such things are done.

18719. Q You are asking that something should be put before Act of Parliament that would be no good. A It might be of some good. It might not deter you, but it might deter others. You think that we could not prove that men were victimised.

18720. Q No legislation can force me to employ a man if I do not think fit to do so? A It may prevent your discharging a man.

18721. Q I cannot discharge you because of your association with a union? A It is long done all the time.

18722. Mr. Robertson.] Q Mr. Robertson says that, instead of keeping a black list, a Manager would have a good memory? A That is right. But, if a Manager had got a written list, he would not put it in a place where it could be found, to give evidence against him.

18723. Mr. Ewer.] Q When in previous trials in the American law against black listing. Do you think if a provision like that was embodied in our local law it would be of any effect? A It might not be so deterrent but the difficulty would be to find proof of such a thing.

18724. Q Of course you are assuming that the Manager would break the law? A I am not saying that. They could not break any law. I am thinking of the reasons that we work under at the different collieries. A Manager can get at a man any time he thinks fit. They are the reasons why that ever a man worked under.

18725. Mr. Robertson.] Q What rules? A You can send any man out of the pit to-morrow, because he was not with under them.

18726. Q Do you suggest that the Special Rules should be wiped out? A I suggest that they should be put in such a way that the men could work in peace. I was one of those that had considerable trouble to take down the Special Rules which were proposed as a colliery, and to wear out our objections to them. Those objections were submitted to the men and were approved of. They were sent on to the Acting Chief Inspector of Mines, and we waited for a reply for three weeks, when we got a reply that, because we had not sent our objections in time, they would take no notice of them.

18727. Mr. Wade.] Q They were dated as a Sunday? A Yes. This happened when Mr. Dixon was acting as Chief Inspector. A question has been asked in the House on the matter and that was the answer given—because we had not pointed out our objections he refused to take any notice of them.

18728. Mr. Robertson.] Q Is that a fact? A Yes.

18729. Q I am hardly credible? A I am sorry you cannot. The Act provides that the notice shall be pointed. We did not take any notice of that provision, because we had not got any pending machinery with which to do our work.

18730. Q Did the Department take that objection? A Inspector Dixon took that objection; and our notice never got any further than the Inspector.

18731. Mr. Wade.] Q Was an notice taken of your objections at all? A No notice was taken of them.

18732. Q Did not the Minister take notice of them? A The Minister had signed. The Special Rules had been passed by the time we got the reply.

18733. Q You have said that it is within the power of a Minister to refuse to sanction rules if he is opposed? A We were trying to find out what was the cause of the delay. Mr. Baild was secretary at the time, and he can tell you all about the matter.

18734. Mr. Robertson.] Q Did you have any conference with your employers about it? A I have told you that, if every Manager attended to carry out the rules in their colliery, every man would be liable to be discharged.

18735. Did you have no conference with the Managers? A The Managers being the rules up as required by the Act, the lawless class. We asked them, and put our objections in. Before we got any reply the rules were gazetted.

18736. Q We have some most comprehensive rules at Hetherington—there are some 150 of them; and all possible offences are thought of, but we never had any trouble. We simply had confidence in our men. They were in those collieries, and we made successful? A You may have different methods. A man may be successful at Newcastle, but they never take a man into Court. The men are perfectly law-abiding, and they discharge the men.

18737. Q Will you send me a copy of the rules you objected to? A I may have the original objections put. If I have, I will do so.

18738. Mr. Ewer.] Q Do you mean the rules relating to the Newcastle colliery? A Yes.

18739. Mr. Robertson.] I thank you for your remarks.



15140. *Mr. Rice* [The rules were drafted at a conference of Managers, and they are the main rules at all the collieries.]
15141. *Mr. Roberts* [Q I should like to know what your objection was? A We objected to the defining of the Managers' power and working the pit according to certain orders. You run tell a man to do a certain work purely for the purpose of taking advantage of him.]
15142. *Q* You do not say that a mine should not be worked in the way that the Manager directs? A I am talking about a deputy coming round to a man and giving him certain orders, when the man knows that it is done purely for the purpose of taking advantage of him. That is where the objection lies.
15143. *Mr. Roberts* [Q I see under the Act it is provided in clause 41 that—“The proposed Special Rules, together with a printed notice specifying that any objection to the rules on the ground of anything contained therein, or omitted therefrom, may be made by any of the persons employed in the mine.” Do you suggest any amendment to that section? A Yes, we object to a printed notice. We think that a written notice should be sufficient.]
15144. *Q* Would the provision meet your case if the notice were worded, “Together with a printed or written notice”? A Yes.
15145. *Q* If that had been the wording of the Act previously would your objections have been in time to be considered? A Yes. I may say that I have had concern, at a conference, to draw attention to the position adopted by some Managers in keeping men in a constant state of confusion, almost waging on a strike. There is nothing hidden about what I am saying. I draw attention to the matter, at a conference between the proprietors and the miners. They objected, it became the practice, round considerably at the mine in which I refer after I had spoken about the matter.
15146. *Mr. Roberts* [I would like to know whether it is within the scope of the Commission to consider any suggestions for the amendment of Special Rules, because I know that in the Hibernian district there are a number of rules which are very objectionable in practice. Some of them have the effect of robbing the mining companies of all liability—that is of liability which they are not relieved of by Act of Parliament. There are a number of rules which require amendment. If the mining union within the scope of the Commission I would have the suggested amendments prepared and submit them to the Commission.]
15147. *Mr. Rice* [If the amendment of the rules could be such as would conduce to the safety of a mine, directly or indirectly, the Commission might take the matter into consideration.]
15148. *Mr. Roberts* [Our Special Rule says “That every colliery shall seriously consider the cost and shall keep up and secure the roof of the head in which he may be working, and it shall not be proceeded with a sufficient quantity of timber he shall come working.” It may happen that the Company may fail to provide sufficient timber, and you see that the question would be what was sufficient timbering. The miner may have thought that the mine was sufficiently timbered, and the Company would be relieved of responsibility under the law, because he did not trust working and leave his working place. The rule has a tendency to cheat the Company in a way it should not be allowed.]
15149. *Mr. Roberts* [Do you suggest that there should not be such a rule.]
15150. *Mr. Roberts* [It should not be left to the management to say what is sufficient timber, and then if a man is injured to deprive him of his rights.]
15151. *Mr. Wade* [The rule states that—“That no mine must incur any danger, and that he shall withdraw if there is danger.”]
15152. *Mr. Roberts* [There are a number of rules which operate hardly on the man, without advantage so far as the safety of the mine is concerned, and they appear to be to be drafted as to relieve the management of liability which they would otherwise incur under the Coal Mines Regulation Act.]
15153. *Mr. Roberts* [I think your illustration is unfortunate, because a better rule for the safety of the man working in the mine could not be drawn up.]
15154. *Mr. Roberts* [You see the mine may be visiting to the expense irrespective of the rule by the deputy who has certified it to be safe. It turns out to be unsafe and the miner would, he held to be guilty of contributory negligence because he did not quit the place. Again, there is a prohibition against a man leaving his own working place, but, in a recent action it was held that a miner had contributed to an accident because he had not gone into a waste working to see what the rule was like. Thus, a man is not to leave his working place, but if he is injured he is blamed because he did not go to an adjoining place to see whether or not it was dangerous. You therefore see how these rules may be made to act in so as to deprive a man of his right of action. Those rules essentially affect the statutory rights which these men have under the Act.]
15155. *Mr. Roberts* [Q Do you desire that the miners should be allowed to propose amendments to the Special Rules.]
15156. *Mr. Roberts* [The Commission might suggest that the Special Rules should be amended from time to time as new rules made, as the various defects crop up, so that they can be remedied. If the Commission think that this is a matter that it could go into I would have the Special Rules submitted to the Delegate Board, and bring them before the Commission.]
15157. *Mr. Rice* [When is your proposal.]
15158. *Mr. Roberts* [If the Commission think that it has the power to suggest amendments to the Special Rules, when they relate to the safety of the men, or otherwise, so as to bring them into such a position that the men can carry them out, I would get the various amendments made and bring them before the Commission for consideration. Each rule, for instance, at night meet the one suggested by Mr. Bower.]
15159. *Mr. Roberts* [The miners can suggest amendments.]
15160. *Mr. Roberts* [The men cannot always tell how a rule will work. They only know that some of the rules are impossible after they have tried to work under them.]
15161. *Mr. Rice* [What you wish the Commission to do is to propose some alteration of the law which deals with these Special Rules, so as to give the miners the right of suggesting amendments to a greater extent than they now have.]
15162. *Mr. Roberts* [Would the Commission have the power to amend some of these rules if they were brought before it, or in any way to suggest amendments. I am rather afraid that that does not come within the scope of the Commission.]
15163. *Mr. Rice* [This is going too much into detail.]



Witness—H. Bower, 18 February 1900

18151 Mr Lyngbalt [ I think the Commission would have power to suggest an amendment of the law whereby any suggestion as to new rules or amendments of old rules might be taken from the Bureau ]

18152 Mr Bower [ That would be a general amendment of the Act which would come within the scope of the Commission ]

18153 Mr Lyngbalt [ According to section 55 of the Act, after the Special Rules have been established, the owner, agent, or manager of the mine may propose an amendment of the rules; but the owner has no right to make any such suggestion ]

18154 Mr Bruce Smith [ If you look at section 59 you will see that the Minister can object to any of the rules, and the owner has access to the Minister. If the owner object to the Minister the Minister will be obliged to refer it ]

18155 Mr Lyngbalt [ My own impression was that the owner objected to a rule and the matter was referred to the Minister, and the Minister came out all right ]

18156 Mr Lyngbalt [ Why not let the matter object without going to the Minister. The Minister may say "I will not take this objection into consideration." ]

18157 Mr Bruce Smith [ It is not very likely ]

18158 Mr Lyngbalt [ He could do so ]

18159 Mr Bruce Smith [ It is possible, of course, but one would hardly think that the Minister would ignore suggestions for a large body of miners, and not send them on to the management of the mine concerned ]

18160 Mr Bower [ Unless something happened like that related by Mr Bower in his evidence when Mr Smith sent objections in. I may say that I think it would be fair to allow the miners some how access to the matter, so that they should not have to ask someone else to put the case of the Minister for them ]

18161 Mr Bruce Smith [ I think that experience shows that a Minister of the Crown as the custodian of the rights of a large body of men, would not that their interests were consistent with those of the proprietors ]

18162 Mr Bower [ That is generally speaking ]

18163 Mr Lyngbalt [ According to the Act of Parliament there was no alternative but to report the objection sent in by Mr Bower because they were not in print ]

18164 Mr Bruce Smith [ The wording of the Act is—"The proposed Special Rules, together with a printed notice specifying the way objections to the rules on the ground of existing contained therein, or existing conditions, may be sent by any of the persons employed in the mine to the Inspector of the district." That may have been read that the objection ought to have been printed, but it is no such thing. It is the notice which has to be printed. The objection were handed to the Inspector, and they ought to have been forwarded on to the Minister ]

18165 Mr Lyngbalt [ Q Did you send a printed notice with the objections? A We took copies of the rules which were pointed out at the colliery. We wrote out our objections and sent them in to Mr Bower ]

18166 Q Apparently it was not necessary to have those printed? A That is the reply which we got back ]

18167 Q All you wanted was to have a printed notice sent with them? A I think we have the letter to-day which we received in reply ]

18168 Mr Bruce Smith [ Q You will see that they have to be submitted to the Minister through the Inspector ]

18169 Mr Bower [ The Commission having had to write down in this matter of a proposed amendment in the Act, there is nothing to prevent them taking any suggestions into consideration, but the point which would have to be considered would be merely whether it is expedient that the Act should be amended ]

18170 Mr Bruce Smith [ If you consider that question, I shall have to go into it, and read up evidence on the point ]

18171 Mr Bower [ We shall not go into details as to the Special Rules ]

18172 Mr Bruce Smith [ But you will consider the matter generally by which the men can send in their objections to the rules without being stopped by any system? ]

18173 Mr Bower [ Yes ]

18174 Mr Bruce Smith [ Let Mr Lyngbalt think the matter over, and put in a definite form. I will then submit it to the Chief Inspector, and see whether it is taken exception to, or to what extent we can fall in with it. Mr Lyngbalt had better say in as many words how it is proposed the Act shall be altered. It seems within the scope of the Commission, because it is one of those matters which come under the heading of the best means of working collieries in the future. All I ask is that the matter may be put into a definite shape so that the Department can have an opportunity of considering it ]

18175 Mr Lyngbalt [ What is done under Section 55 of the Act is that the owner or Manager must frame Special Rules for the mine within three months after the commencement of any working for the proposed opening of a new mine, or of commencing the working of an old mine, and if these special rules are not objected to within four days they are approved, and they are binding so far as the men are concerned, the "et cetera" goes on then ]

18176 Mr Bruce Smith [ Would not this suggestion come better from Mr Lyngbalt when he brings up his suggestions ]

18177 Mr Bower [ Having discovered a defect in the Act, Mr Lyngbalt can suggest in something like explicit form, in what way the Act can be amended ]

18178 Mr Bruce Smith [ And the matter will have to be referred up by future machinery to decide in cases where the men and proprietors do not agree. There may have to be arbitration ]

18179 Mr Lyngbalt [ I would suggest a board ]

18180 [ The further consideration of William Bower was then postponed ]

18181 Mr Bruce Smith brought up the depositions taken in Dorton Hall on the 19th of July, 1900, as an incident upon the evidence of Frank Pearce and others who had died from the effects of injuries accidentally caused by a sack of coal which fell on them in the Dorton Hall North Mine. Mr Bruce Smith also produced three letters then being from Mr J. Hildard of the Dorton Hall North Mine, to the Chief Inspector of Mines, and one a letter from Mr. J. Mayne, also sent to the same officer ]

18182 Mr Bower [ These depositions have already been referred to in the inquiry, and can now be put in ]

18183 Mr Bruce Smith [ It was suggested that there was some evidence of burning, but there was no evidence at all ]

18187







MR. WILLIAM BOWEN, previously sworn, was further examined, as under —  
Examination in chief by Mr. Lynam

18210 Q. We were speaking of the 29th Reorganization, and I told you the legislation in America — so that, say, do not think that legislation would operate, if adopted here? A. It should certainly not as a document to Managers witnessing the same — that is to say, a man might believe before he would make himself liable to prosecution for deliberately throwing a man out of work without sufficient reason.

18211 Q. And, on which case is that, would it have any effect in making the men more cautious in reporting any defects they observed? A. That is a related consequence. At the present time, there is no doubt, the majority of men are afraid to report, or, at least, that is my impression. They will hesitate to report anything about their work, for the simple reason that they might get either such, or something more.

18212 Q. It has been suggested that the Managers witness any reports in the condition or defects of the mine, — what has been your experience? A. They are only the exceptions that prove the rule. There are some I believe, but the majority are not so. I am satisfied of that, because as much of instances, I have myself at instances brought under my notice where a man has repeatedly reported some defect, the lighting of gases in places — and he has been told by the under-manager that he was too much so.

18213 Mr. Lynam then asked the witness the name of the men to whom he referred. The witness gave the name of the mine, and the name of the under-manager, but declined to give the name of the men.

18214 Mr. Robinson pressed the witness to give the names of the men, or, at least, to be told given the name of the under-manager.

18215 Mr. Lynam asked him then the name of the miner should not be passed far as he might be prejudicially affected if it became known. The evidence had been added merely to show that reports as to the condition of a mine are not welcomed by Managers.

18216 Mr. Wade objected that either the evidence was altogether or inadmissible. If it were admissible, he thought that the Managers were justified to have the statements thoroughly investigated, and, therefore, the name of the mine should be disclosed. Technically speaking, he (Mr. Wade) thought the evidence, being purely hearsay, was inadmissible. If Mr. Bowen would not disclose the miner's name, he (Mr. Wade) would not ask that the whole of the evidence be struck out.

18217 The witness, questioned by Mr. Bowen, said that he had never spoken to the under-manager referred to, nor the under-manager to him, as the subject.

18218 Mr. Robinson said he would like this statement to be put to the witness. If it were true, he would like to be able to know.

18219 Mr. Bruce Smith said that Mr. Adamson would like the matter to be put, because it would be just as well to know what managers or under-managers discourage the reporting of gas.

18220 Mr. Lynam asked that the evidence should be allowed to remain on the deposition, and said that, perhaps, later in the day he might see his way to have the name of the miner disclosed.

18221 Mr. Bruce Smith said that the evidence, as given, was purely hearsay evidence, and such as would not be accepted by any Court in the world, except, perhaps, a House of Commons. He considered that Mr. Lynam had no right to have it kept upon the minutes pending his consideration as to whether he would bring the evidence forward in a proper form. Mr. Lynam could, by and bye, if necessary, give the evidence again in a proper way.

18222 Mr. Bowen: You object to it, Mr. Bruce Smith, as not being evidence at all, and you say that that principle ought to apply in this Court which applies in every other Court as matters of fundamental justice, in relation to the rules of evidence. Certainly, I think, as the point has been taken, that, that is a very good objection, and, therefore, I think that the evidence ought to be struck out. Then, if anyone introduced in the matter wishes it to be reintroduced on a proper way, there is the knowledge of its having been introduced, which can be obtained for the purpose of excluding it, if it can be properly reintroduced.

18223 Mr. Lynam: Very well, Your Honor.

18224 Q. Can you give a personal illustration of that? A. Yes, in the Walbrook Mine. In this mine I was one of the men present; so that there is no hearsay about this. It was to a section of the mine where we were supposed to use locked lamps. We worked with locked lamps for two or three months; and the under-manager visited the place daily with a free lamp, as open light.

18225 Mr. Robinson: Q. Who was he? A. Mr. Thomas Bosfield. His father was under-manager; and he was acting as deputy for his father at the time — his father sometimes came on.

18226 Mr. Bruce Smith: A. Where was this? A. It is a couple of miles from you. Both the late Inspector, Mr. John Dixon, and the present Inspector, Mr. Dixon, visited it at the same time with open lights, and no mine was allowed to use an open light.

18227 Mr. Bosfield: Q. The inspectors came in with open lights? A. The inspectors came in with open lights as well.

18228 Mr. Bruce Smith: Q. Do you mean about the same time — was it within weeks or months? A. It was during the months that we were working with the locked lamps.

18229 Mr. Robinson: Q. Of course, that has hardly any bearing upon the point of the men being afraid to report? A. No, I see only just showing what way to do so.

18230 Mr. Robinson: One thing at a time.

18231 Mr. Lynam: Q. Can you give a personal illustration of a report being made to the men present, which they have repeatedly objected to, that is to say, they did not want reports to be made to them? A. No, nothing of that kind was used with me. Of course, there is one aspect of the same sort of thing that I have met previously, there are rumors of the same kind that men were afraid to report.

18232 Mr. Robinson: Q. Have you made reports? A. Yes, when I have found gas.

18233 Q. You had no hesitation in doing so? A. I never had at any time. I have always taken those risks.

18234 Q. And you have not suffered? A. I am not sure that I have.

18235 Q. So it just simply wants a little check? A. Exactly, I believe it does, now known. If the majority of the men would do it, I am satisfied that would cause all that sort of thing to cease, but, unfortunately, they are not all built on my base.







15130 Q I hope you do not mean to say that there is any connection between the politicians and the proprietors—and that the proprietors had the right to recommend? A I did not mean to connect them. I do not mean to say for a moment that the proprietors can pull the political strings any more than the men.

15131 Q You put aside that last half? A I said that they had the same choice.

15132 Q I wish, if you showed the right to recommend a man for the position of Inspector, that would carry the corresponding right for the unions to nominate a man, and you said that they had got the right now? A No. I said we had no objection to their having the same right. That is what I intended to convey. I said they have got the same right as we have at present.

15133 Mr. Speaker? What I understood was that the proprietors have the same right as the men have now to get an appointment made; not that they were exercising a right that the men had not got, in any recent appointment.

15134 Mr. Speaker? I do not know what Mr. Bower meant to say, but he distinctly said, "They have a man."

15135 Witness? I want to convey by that that we have power to recommend now, but no power to have our recommendations considered. I take it that the Wharfedale have the same right—they have power to recommend, but I do not see how their recommendations can be considered, any more than that of the unions.

15136 Mr. Robinson? Q You want to be sure that your recommendations will be given effect to? A Yes, unless good reasons are shown why it should not be.

15137 Q On the other hand, the proprietors should have the same right to say that their recommendations should be given effect to—where would you be?

15138 Mr. Robins? Q What you mean is that the proprietors and the employers should have the right to nominate, and from that nomination the appointment should be made? A Yes.

15139 Mr. Joseph? Perhaps the wording of this suggestion should go a little further, your Honor. It only says: "That the masters of each district have the power to recommend for appointment an Inspector for their respective districts."

15140 Q I understand now, from you, that you want a power to have that recommendation carried into effect if no good reason is shown against it? A Yes.

15141 Mr. Joseph? Q How is that possible, because, if two sets of people nominate different persons, and there is no substantial objection shown to either nomination, it is clear that they cannot both be appointed? A Our side are leaving it partly to experts. They are not asking for any of themselves to be nominated.

15142 Mr. Joseph? Answering that, it would get over the difficulty of political influence if some third party, not representing either of the parties, should be appointed.

15143 Mr. Robinson? Q You are aware that appointments, at present, are ministerial, would it not be your view if the appointments were made by the Public Service Board,—the Public Service Board is supposed to be non-partisan? A It might be better, even, that way.

15144 Q Do you think it should be taken out of the possibility of political influence? A We do, decidedly.

15145 Mr. Robinson? I quite agree with you.

15146 Witness? Mind you, I do not want that to reflect upon any of the late appointments at all, but it is a well-known fact that one of them, at any rate, never had any experience worth talking about—that is, I never knew him to have any experience, and I have known him myself all his life. He was simply a blunder, looking after the mine as the first. Of course he was a mining subject, but he could have had very little practical experience.

15147 Q What is his name? A Mr. Watson.

15148 Mr. Bower? Q But he had a splendid letter from Mr. May? A It would only be on theory.

15149 Q Was it not on practical experience? A Where could he have had practical experience? I never knew him all his life.

15150 Mr. Robins? Q You have said that your recommendations does not mean that your body of men should be recommended any of themselves, but they select to recommend experts? A Yes.

15151 Q But not the case that among your men using the rock there may be experts? A Yes.

15152 Q Then, I am not correct in assuming the opinion that you mean that they should be deferred authority? A I mean to say that men should hold certificates of competency as when you believe they are nominated.

15153 Q The Act says that must be so? A Yes, it does not matter what they are working at.

15154 Q If the law were so altered as to allow the two parties to nominate Inspectors—the employers and the employees—in the event of a deadlock taking place, what would you suggest as a way out of the difficulty? A Mr. B. Herbert made a very good suggestion, that the Public Service Board should make the appointments, if the two are from political influence.

15155 Mr. Robins? Mr. Robinson did not mean that at all. He meant that you should not have the right to a number at all.

15156 Mr. Robinson? Yes, I think it is ridiculous at present.

15157 Witness? This is put more as a point against the existing system. You must admit that the Government Inspectors should have the confidence of the workmen, if possible.

15158 Mr. Robins? They should have the confidence of both parties, if possible.

15159 Witness? With this, then, (as you suggested being started away recently the opposite. No wonder has got very confidence in these words. There may be the best men in the mine. But they are in that position that men should have the true set of there is no confidence as from the effect of those reports or not work anything. Especially speaking that is the reason for my suggestion. If the men will consider in the Government Inspectors it would not have been necessary to appointing.

15160 Mr. Robinson? Q You do not suggest that the proprietors had any influence whatever in the appointment of the Inspectors you referred to? A I do not suggest that—that never entered my mind.

15161 Mr. Robins? Q If you agree with Mr. Robinson's suggestion to pass the matter over to the Public Service Board entirely, the same results may be obtained from that Board as you get from your local appointments? A They may.

15162 Q Let us understand what your ultimate recommendation is, is it that you prefer the matter to be passed into the hands of the Public Service Board without either party having the right to nominate



to be recommended, so that you desire to have the right of recommending, giving the same right to the employers, and to allow the Public Service Board to make a choice from the recommendations so made? / The position is just exactly that, that we have said, I say, but the right to have the recommendation considered by the Minister, and if the Minister gave a different reason why the appointment was recommended should not be made, we would be satisfied. But under the present conditions, the workmen have no confidence in the ministerial appointments.

18183. *Q* Would it meet your view if the law were so framed as to prevent any Minister of Parliament from making a nomination? / A Yes, but how are you going to prevent it?

18184. *Mr. Horne* / *Q* Do not you think it would meet the case if it were the practice to give full notice beforehand, say a month's notice, of the intention to appoint a certain person as Inspector, so that the miners, or any persons interested, might have an opportunity of objecting? / A Yes, that would meet it in a way—the right of objecting is a body to any appointment, or any nomination.

18185. *Mr. Horne* / Yes, the appointment being with the Public Service Board.

18186. *Mr. Robertson* / It would be rather anomalous persons for the men to be put in.

18187. *Mr. Lyngby* / I can quite see that they might object to a man, and his whole career would be affected.

The miners, knowing that one had objected, would probably all take the same line, and not to accept.

18188. *Mr. Bruce Smith* / Your Honor will take notice of the fact that many practical men, eminently fitted for the position, would not think of going for a nomination, looking for a nomination; and you would exclude all of these from competing.

18189. *Witness* / I do not see the difference between trusting to the workmen and trusting to Members of Parliament.

18190. *Mr. Robertson* / Yes, but what professional men of standing or self-respect would do such a thing?

18191. *Witness* / If the appointments had been made of that description, there would probably have been no objection.

18192. *Mr. Robertson* / *Q* Do you mean to say that any professional man would not for his appointment, any man of any standing or self-respect? / A I know I never do anything of the kind myself, but I do not know what other people would do.

18193. *Mr. Horne* / There is no doubt that trusting studies many people as one of the latest forms of human operations.

18194. *Witness* / It brings me to this, why should not the appointments be made by competitive examination, and the best men get them?

18195. *Mr. Lyngby* / That is what I was going to suggest to you.

18196. *Witness* / Let the best man get the position. That would clear away all doubt.

18197. *Mr. Robertson* / But unfortunately examinations are not a test as to the qualities of the men to be appointed as Inspectors.

18198. *Witness* / You are old to that the amount of practical experience they have had.

18199. *Mr. Robertson* / Even that would be objectionable, because a man might have the practical experience and the valuable knowledge, and yet be absolutely devoid of test, so that sometimes would probably save a day or two after his appointment.

18200. *Mr. Lyngby* / *Q* I gather from your experience of opinion Mr. Horne that you think it would be better to have a man who worked by a body of experts, after they have tested his qualifications in every way they possibly can, or perhaps to have some persons appointed by the Minister, who, perhaps, have knowledge of mining, and has made a mere guess, as it were, in picking the man?

18201. *Mr. Bruce Smith* / There I am afraid the most difficult if you come to it is the composition of the Board of Experts, and the representation of the different interests upon it. Then say Mr. Watson has passed the best examination a man could pass, yet Mr. Horne says he lacks practical experience.

18202. *Mr. Robertson* / I may say that the system of appointments of Inspectors in the British coal fields was first, that the appointments were made by the Home Secretary. Then examinations came in, and then that was abandoned, and now they have reverted to appointments by the Home Secretary. Of course, political influence, which Mr. Horne takes exception to, is not so rampant there as here.

18203. *Mr. Lyngby* / I want the Commission to know that I do not wish to depart from the recommendation, which is made by the Newcastle District Board, even though Mr. Horne says, in some extent, we do to depart from it.

18204. *Q* I ask you, Mr. Horne, do you still ask for the power to recommend persons to the Minister, and for the appointment to be made if no sufficient reason to the contrary is given? / A I do, unless a better method is pointed out.

18205. *Mr. Bruce Smith* / You might add—who is to determine the sufficiency of the reason?

18206. *Mr. Lyngby* / I mean that I go the whole length of the recommendations; that the miners should have the right to suggest the man, and that, where there is some valid reason given against the appointment, he should be the Inspector for their district, because it is their safety, precisely that it is to be considered, and of their safety generally is considered the safety of the property generally is concerned—but precisely it is their safety, and the measure do say that they have the right to make a nomination and to get the person nominated appointed, unless some valid reason is given against it.

18207. *Mr. Bruce Smith* / So that, actually, the miners should have the appointment of the Inspectors.

18208. *Mr. Lyngby* / No. If a valid reason was given against a nomination that nomination would lapse.

18209. *Mr. Bruce Smith* / Whom is to be the judge of the sufficiency of the reason?

18210. *Mr. Lyngby* / I take it that the Minister is to be the judge of the sufficiency of the reason.

18211. *Mr. Robertson* / Do you think the Minister could resist the influence of 5,000 or 7,000 miners in a case like this?

18212. *Mr. Lyngby* / Certainly, as a sufficient reason.

18213. *Mr. White* / Then, why cannot he set as the first instance, as now?

18214. *Mr. Lyngby* / Because he might put in a person, as in the case of the Mr. Watson, whom the men have no confidence in at all, and who, accordingly, had no practical knowledge. If the miners were to nominate a man who is an expert, who should be not be appointed, if there is no sufficient reason against him.



Witness: W. B. Smith, 20 February, 1933

19312. Mr. Bruce Smith: I think, in the Watson's name has been dropped in here, I may state that Mr. Atkinson refuses me to say that he has the most perfect confidence in Mr. Watson's practical ability and personal knowledge.

19313. Mr. Atkinson: Q How would it do if a conference composed of representatives of the miners and representatives of the miners, were to meet and nominate three or five men, and send the names on to the Minister to make a choice—nominate a sufficient number so that he could make a choice, among those persons actually nominated? A That would be a new sort of the difficulty. I should say it would be better than the present system, at any rate. We would be prepared to take almost any amendment of the present system. As I told you previously, this recommendation is directed principally as a protest against the present system, and not really to put in Mr. Watson's theoretical ability, which depends that at all, as a matter of making, it should be very expert as to theories, but his practical knowledge must be very limited.

19314. Mr. Atkinson: Q Under our proposition, an objection might be sent to the Minister by any of the proprietors, and the Minister would be bound to consider an objection, then whatever reason it might come and if it were a good objection, the nomination would be at once defeated.

19315. Mr. Atkinson: Supposing the nomination sent on a nomination, and objection was taken to this nomination, according to your way of putting it, the next nomination would have to stand aside.

19316. Mr. Atkinson: No, not unless it was a good objection.

19317. Mr. Atkinson: Then what would follow?

19318. Mr. Atkinson: It would have to be referred back to the miners, to see if the miners could get over the objection, and, if the miners could not get over the objection, the nomination would be defeated.

19319. Mr. Atkinson: What would follow then?

19320. Mr. Atkinson: It would be in the hands of the Minister to call for nominations.

19321. Mr. Atkinson: The new objection might be made to every other nomination.

19322. Mr. Atkinson: I think that you are assuming a state of things that would be most undesirable, because you are assuming that the miners might nominate some men to whom there would be a valid objection. I think it is a fair assumption that, having regard to their own safety, the miners would not nominate any man to whom there could be any valid objection.

19323. Mr. Atkinson: That might be so, in their opinion, but other people might have a valid objection to him.

19324. Mr. Atkinson: But we would leave it to the Minister as to whether the objection was valid or not. I submit to the Commission that it would certainly defeat the present practice, which is very objectionable.

19325. Mr. Atkinson: Does the present practice of appointing inspectors differ from the practice followed in appointing other public officers?

19326. Mr. Atkinson: Yes; other public officers are appointed by the Public Service Board.

19327. Mr. Atkinson: Why should not the appointment of colliery inspectors be under the Public Service Board?

19328. Mr. Atkinson: I was not that it would be an improvement if it were under the Public Service Board; but that does not carry out the recommendation that is sent to me by the Minister's Minister. I am representing their view, and I do not wish to depart from their recommendation. They wish to have the right to nominate a person, who shall be appointed as the Inspector in their district, unless some valid reason is shown against it.

19329. Mr. Atkinson: But Mr. Bruce says it is simply a protest, and if any feasible suggestion can be made for a way out of the difficulty, he would accept it. I think it that he is representing the miners.

19330. Q I ask you, Mr. Atkinson, if you would accept appointments by the Public Service Board, as against the terms of your commitments. The Public Service Board is supposed not to be under any political influence and to be perfectly unbiased and would probably have better opportunities of ascertaining the qualifications of candidates than the Minister? A Yes, they would have to have some information of some kind to get the qualifications of the candidate.

19331. Mr. Atkinson: I understand that in all cases where the Public Service Board have the duty of appointing any officer for any particular work they always do hold themselves to find out who is best qualified.

19332. Witness: I would prefer a competitive examination.

19333. Mr. Atkinson: Q You would prefer a special Board of men with knowledge of mining? A Yes; then you could take into consideration a candidate's status and his personal knowledge, besides his theoretical knowledge.

19334. Mr. Atkinson: I think it ought to be remembered, in speaking of the Minister making a choice, that he always has the Chief Inspector of Mines at his elbow, who is supposed, at least, to be the best man amongst the officers chosen from England for that position.

19335. Mr. Atkinson: It is known, also, that the Minister always has half-a-dozen Members of Parliament at his elbow.

19336. Mr. Atkinson: I am free to say that I have no confidence in Ministerial appointments.

19337. Mr. Atkinson: We are trying to get over the same difficulty. If the men send a recommendation, I submit that, so far as our interest, they would not make any but the best recommendation.

19338. Mr. Atkinson: That is not a recommendation to an appointment following generally, as may likely follow, the most serious mining, which is even likely to be one of the worst appointments that can be made.

19339. Mr. Atkinson: Perhaps Mr. Atkinson might adopt this, that if there were a Board for the purpose of examining these candidates for the office of Inspector and that Board were to select nominations—[Inaudible]

19340. Mr. Atkinson: I think, your Honor, we are drifting into rather a peculiar position. I understand Mr. Bruce comes here as, practically, the representative of a number of other men, like himself, with personal knowledge. We have some here with a definite proposal, and only a few men, like Mr. Lyndall, stand that he could not depart in any way from the present form of that recommendation. If we embark on a more lengthy discussion as to what Mr. Bruce might reasonably accept, it is quite possible that not only would Mr. Bruce be placed in an embarrassing position by having committed, as a representative witness to a person, but his statements might not agree to, but we should be departing from the object of the Commission, which is merely to take evidence as to what individuals think. I would suggest.



suggested that we take her evidence as to what he individually is prepared to recommend. Then other members will be forthcoming, because you may depend upon it that Mr. Robinson may have something to say upon the proposed, and the Manager, too.

18350 Mr. Lyngby? Q. Do I understand if you support the proposed, that the means of such district have the power to recommend the appointment as President for the respective districts? A. I support it, unless there is a more efficient proposal submitted. Of course, if there is, I am prepared to agree with it and to support that.

18351 Q. And you say that this recommendation implies that, in the absence of a valid reason against the nomination, the appointment should be confirmed? A. Yes.

18352 Mr. Robinson? I think, also, that that leaves the final power of appointment in the power of the Manager, as it prevents, and you do not propose any change?

18353 Mr. Lyngby? Yes.

18354 Q. Reviewing Section No. 25—"That a red light be carried on the tops of trucks or cars on narrow places or other self-acting facilities," what have you to say about that? A. There have been fatal accidents owing to the want of something of the kind. In most cases, where we have, where the trucks are by men and tail, the cars travel at a very high rate of speed, and the cause of the failure and of the rope between the trucking when they are travelling out against the car, and the men sometimes have to get very close up to the car, and have not time to lead a manhole to get into out of the way. The men sometimes travel at 15 or 20 miles an hour, and there is nothing to guide a manhole at all. Then often, if the man is pushing his way out against the car, he does not hear the sound, and the car almost on him, through the cause of the ropes and the rollers, and we think there should be some light to distinguish a car coming to that.

18355 Q. Do you know whether that is the practice in any railway? A. No, I have not seen it in practice.

18356 Mr. Robinson? I have had many years' experience, and I never had any trouble in getting out of the way of cars.

18357 Witness? I have had, though, sometimes.

18358 Mr. Robinson? I am not out of the line.

18359 Witness? It may be that, but I do not suppose you have been in the habit of putting two or three picks on your shoulder, and hurrying to get out as quick as you could, and being so often. A Manager is generally on the lookout.

18360 Mr. Robinson? This man with two or three picks on his shoulder should take notice.

18361 Witness? But I can tell you that very often cars come very close indeed, before you catch them, and it makes a man jump to the side, and not look for a manhole either.

18362 Mr. Robinson? Q. Your recommendation applies only to the main and tail rope system? A. It does not apply to the tail rope.

18363 Q. And it would only apply to haulage roads, where persons travel regularly? A. Yes, that is so, and there are a good many of them in the Sanquhar district.

18364 Mr. Lyngby? I think the recommendation is confined to "Trucks or cars in transportation, or other self-acting vehicles."

18365 Mr. Robinson? Q. But there are engine-planes worked by tail-ropes. He moves it down, runs, in where the main and tail rope is in operation, and not down it, when the road is not as a travelling road as the ordinary ones? A. That it is not required.

18366 Mr. Lyngby? Q. Do you see any particular difficulty in having this recommendation carried out? A. The expense must be considered. It would be only the first cost of the lamps and the oil.

18367 Q. Recommendation No. 25—"That a clean be carried in the tail closely before any other arrangements should be adopted in all mines where workmen are employed." What would you suggest under that? A. I am not prepared to suggest anything, because the reasons given at the time did not meet with my approval, and I did not trouble about it. There are times in a mine especially when it is opening up new workings, when a situation may be created, but as a rule, it does not necessarily follow, but they do not make any necessary arrangements then. For instance, it might be two or three narrow places giving way and no money arrangements whatever in the mine, and it is too much trouble to haul down to the surface, I think, under those conditions, there should be some arrangements made.

18368 Mr. Robinson? Q. But it is not a fact that, when the men have the opportunity of shaking the air, means, plenty of dust and dirt about, they refuse, and will not take the trouble, and there have it in the windward side of them, and work away comfortably. They do not even make it to the back and never it up? A. I have seen instances of that kind.

18369 Q. Is there even out of air it is to take the power of the mine to shake the mine? I refer to? A. Not at the place I refer to. I think, generally speaking, he could, but, in a new mine, arrangements of some kind should be made. I think you will admit that yourself.

18370 Q. Well, it is a mine, I think, in a new mine, but the question is how it is to be done, with a very difficult thing to arrange? A. I know it is.

18371 Mr. Lyngby? Q. You have no suggestion to make on that? A. I have none whatever. The others may.

18372 Q. Recommendation No. 26—"That, in our opinion, the management of a mine should not interfere with the right of an employee to go out of a mine when he deems fit." A. That is a very necessary thing. I believe, legally, the mine has a right to claim it now. It is a good many times the men are restricted by regulations from getting up to the surface except at a certain time of the day. Now, there are cases occasionally cropping up where men would like to get home and their consent. I can give you an illustration. I had occasion to travel up in the mine in one mine where there were only myself and the clerk proper. But other men got in the rope with us to go up, but they were ordered out, although the men driving would have allowed the whole of them to the pit top. At many times I have heard of men being stopped from going home when there was no necessity for them to be in the pit. I believe it will be admitted by Mr. Robinson that, even in the best regulated collieries, the men get into a bit of trouble, and the men do not get their work away, two men work on a place, and there is an necessity for the two of them there; perhaps, in a particular heading, one man could go away from work place, and they have done it, and have been refused the right to go to the surface. Even if, by the men going home, they interfered with the output of the colliery, the Manager has a legal remedy against them now, and I am sure that men and make them pay for it, and I do not see why a man might should be interfered with, his right to go home at any time.



Hearings—Mr. Brown, 12 February 1934.

15378. Mr. Robertson: Q You state that the men ought to be a law to themselves as to how long they will work, that they ought to have the power to stand in the middle of the working day, no matter whether for a reasonable cause or not? A Yes. I claim that if the men will carry me away, they ought to be allowed to go. I consider that the law amounts to it, but to say ten, or twelve, or twenty men to the surface is a mere nothing to the day's output in comparison with keeping the men there when they have surface to do and are not paid for the time they are kept there.

15379. Q I understand that it is the practice to allow men to stand when they can show some reasonable cause, without going without saying? A I cannot agree to say that the other day where a man was permitted to go down to work for half a day, he had business that, probably speaking, compelled him to be at home in the afternoon, and he asked the Manager if he could get up at a certain time, and the Manager said "No, you cannot," and the man had to go home again. He had to lose his day's work, because, if he had been in, he and his mate would have made up for the day's work not between them.

15380. Q I have certainly had to experience it a case of that kind, of a man having made a reasonable request and been refused. It would not all discipline if they were to be a law to themselves? A Then you evidently assume that men will go down the pit and knock off any time to come out.

15381. Q They will? A Yes, as there is no law to prevent it, and, unless he has a good reason, he will not come out.

15382. Mr. Robertson: They will come out for a very trivial cause sometimes.

15383. Mr. Bruce Smith: Your Honor, is not the condition of labor of the miners that should be secured by the Arbitration Court?

15384. Mr. Brown: I hardly believe the question of safety.

15385. Mr. Leggett: I am putting it in that way. The men should not be kept down a mine where there is no danger.

15386. Mr. Robertson: Do you mean to say that a man would be kept where there was any danger?

15387. Mr. Leggett: I do not say any dangerous danger. There is always danger in a mine, and it is quite reasonable to keep a man there. I quite agree with what Mr. Bruce Smith says, that this is severely a matter for the Commission, but I put that as a recommendation and leave to the general safety of the workmen.

15388. Mr. Bruce Smith: Your Honor says that the Southern miners have not suggested this at all, and, with regard to the Northern miners, the Arbitration Court is about to do so, for some time and this court may be moved there. The same thing applies to the country arrangements.

15389. Mr. Brown: The question has been dealt with by the Arbitration Court in the Southern mines, and it has been decided that a man cannot leave his work without reasonable cause.

15390. Mr. Leggett: It is a remarkable thing that in places where the men can walk out of the mine there is no trouble at all.

15391. Mr. Brown: You cannot walk them.

15392. Mr. Leggett: A man cannot walk by his station without being seen. And there is that case which I referred to, where it went even beyond Perthshire, and might be put down as patently untrue. We had got into the cage which would carry ten men, and there was enough time waited to get those men out before the business to have run two or three more men out of coal, but those men had to get out and stay in the mine.

15393. Mr. Robertson: Q When the men walk out of a tunnel there is no danger, that is to say, they do not come into contact with the leading arrangements, the working arrangements? A Certainly.

15394. Q And they do not interrupt the working of the leading? A No.

15395. Q When you ascend the shaft it is probably working at high pressure, and you do interfere with the output? A It is so considered that it makes no difference.

15396. Q That is a matter of opinion. A railway may be working at high pressure, and if the men say not up and down whenever they think fit, it may considerably influence the output. Surely you can say whether it would or would not reduce the output? A I cannot imagine the conditions when it would.

15397. Q Is not every step a loss of output when the mine is working at high pressure? A Yes, but it is so small that it can hardly affect it.

15398. Q It depends how often it is used. Will you admit that when men are at work men a cage of coal is lost? A Yes.

15399. Q And if there are twenty, there would be twenty cages of coal lost? A Yes, if you could keep the pit working at that rate.

15400. Q Then, if the men come out during the working hours that, to a certain extent, some more danger than when they come up the shaft when the leading and working arrangements are suspended? A I do not see that that necessarily follows.

15401. Q Does not it necessarily follow that, when men come up to the shaft and there is no leading on, and the cage is prepared for working men, there is very much less danger than when they come out during working hours? A I never saw a man get where the men were put at the pit bottom before the cage came to a standstill. In the majority of cases that does not apply at all.

15402. Q Do not you say that there is extra danger when the men come out during working hours? A It is a little extra danger.

15403. Q At all events, you want to be a law to yourselves? A No. The conditions you mention are almost impossible, because the men do not come out in the way you say, for a matter of twenty cages to be used, but it is certainly possible that two or three cages might be used in the day and that the difference in the output would be only nominal—nothing at all. It will, in all probability, cause a lot of friction in the mine. Because the men are determined to achieve their right if it is legal, and they have got an opinion to the effect that they cannot be stopped at all, and, if it comes to a crisis, the chances are that you will have to see the sign up for one man. You have no right to keep a man down there.

15404. Mr. Robertson: Q Then, according to that, if a man were sick or would have the right to refuse him the property once up unless there were ten men who wanted to come up? A You could refuse that power if you could refuse it reasonably, but a man who would refuse a man the right to come up would not do it the second time.



18498. Q Is it not reasonable that the men should only have the right to accept if they have reasonable cause? A I am assuming all the time that the men have reasonable cause. I cannot say that the men would come up in the way you put it. I cannot imagine a condition of things like that.

18499. Q Unfortunately, we have come to look at things from a different point of view from that of the mine, and we do find that the miners do come up without any reasonable cause at all? A You are talking about 1 per cent of the total number. You would not get ten men like that, and you could refuse him if you think he has no reasonable cause. If the men find they have a legal claim, they will push it to an extreme.

18500. Mr. Bruce Smith. Does not your Honor think it would be better to limit this question, so far as the Commission is concerned, to the right of the men to come up to the surface if they have the right to come out of the mine, and leave that to the Arbitration Court?

18501. Mr. Bruce. As far as that goes a man must have his personal right to be in any place that he wishes to be in. If he breaks his contract by coming away, when, by contract, he ought to be working, then he may be punished, by strikers, or he may be sued for that breach of contract; but his personal right to be where he wishes to be cannot be interfered with.

18502. Mr. Bruce Smith. But I submit that the Court will not go into the question as to whether it is desirable for men to have work at any time.

18503. Mr. Bruce. No.

18504. Mr. Bruce Smith. But that question is being discussed between Mr. Robinson and the witnesses, and, if Your Honor will look at the wording of the Commission, neither the question of providing ordinary arrangements in the mine, nor that of whether the men have the right to come out of the mine at any time, when there is nothing abnormal in the conditions of the mine in order if necessary, comes under the Commission? Then has nothing to do with the refuse of the men.

18505. Mr. Bruce. I think you are right there.

18506. Mr. Bruce Smith. If the Commission deal with it, it will mean that, by and by, the attention of other witnesses will have to be directed to Mr. Bruce's remarks. His evidence as to those two questions has aroused ready thoughtfulness on your part, and of those two matters we go down up and the evidence has to be answered by the Managers, it will mean many more hours. I suggest, therefore, as we are all desirous of getting this done to reasonable limits, that the Commission will not go into any question that really do not come within its purview.

That is the scope of the Commission, as read by Mr. Gresham at the opening day—

Know in this way—do not—authorize and appoint you—, to conduct a diligent and full enquiry into the causes of the epidemic that recently occurred at the Mount Kemble Colliery, and also to investigate all the surrounding circumstances, as to the manner in which the epidemic was spread in any manner or manner, and further to make any recommendations affecting the general management, especially the working of collieries; and further any suggestion which you may deem advisable for the amendment of the law relating to mining, and mines, especially with regard to the treatment of coal dust, the prevention of the accumulation of dangerous gases, and the use of safety lamps and explosives.

18507. Mr. Bruce. Two suggestions, and I think you are right in suggesting, that that does not come upon the Commission the duty, nor give the Commission the right, in addition to the duty of enquiring into everything that may in any way possibly affect the conditions, but it tends to limit the scope of the enquiry to those questions which deal with physical matters in collieries and mines, and more especially in relation to the danger from explosives. I think, therefore, that we must draw the line there.

18508. Mr. Bruce Smith. I think that argument is answered by the fact that another tribunal is in existence at the present time which was specially created by Act of Parliament to enter into the consideration of all these conditions of labour, a specially-qualified tribunal, and that the miners of Newcastle, who are bringing this up, now have raised questions before that Court to which they might make an addition, and have those matters discussed there.

18509. Mr. Bruce Smith. I have already said that I do not propose to carry the matter any further. I would not propose to ask the subsequent witnesses any questions regarding the last recommendations, No. 25. I quite agreed that, except on the principle that there might be a danger always present in a mine, I could not bring this within the scope of the Commission.

18510. Mr. Bruce. It is too remote.

18511. Mr. Bruce Smith. I think if Your Honor, that the Commission will not go further into those two questions, so that it will not be necessary to prepare any evidence upon them?

18512. Mr. Bruce. It appears to me and my colleagues that they are just beyond the edge of the scope of the Commission.

18513. Mr. Campbell. Q I am desirous you should see something regarding the practice of allowing refuse in the working levels, as being an objectionable practice? A There is a practice in connection to most mines that I think should be prohibited, if possible. That is, in refuse work, using work, prospecting places, there is a habit of allowing the refuse behind the breakers in the streets, and it has a tendency to interfere with the ventilation considerably. I think that should be strictly prohibited in narrow work. I do not think it needs many reasons to be informed who, because, I think, that the fact that it interferes with the ventilation should be a sufficient reason to give a prohibition against any Manager who allows it.

18514. Q Have you observed that during your check inspection? A Yes, in many places.

18515. Q And, in your opinion, that that is an effect on the air or climate? A Yes, it is made considerable dust and dirt, and the power of the air current is stopped.

18516. Q Would there be any technical difficulties in having the refuse removed? A None whatever, because it is generally removed altogether when a time.

18517. Mr. Robinson. Q There is the expense? A I should say there is some expense very much, because when a man has a ship of refuse he might as well fill it, as the Manager sends in a body of men to fill it after they have run it out through.

18518. Q Just so, but sometimes it is not necessary to fill it? A If my experience leads me to believe that, where it is allowed behind breakers, it must always have a bad effect on the ventilation.

18519. Q Assuming that is so, if sufficient ventilation is got at the face notwithstanding that obstruction, how does it concern the mine? A I am not sure. Well, it does affect it in places that I know, at least, I believe the ventilation. For instance, if there is a pair of working headings, and one of these headings is the



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with water right for the area, and you take the air up the wind heading, and you find it pinned right with surface wind direction, will not that have an effect on the pressure?

24122 **Q** It does not require any argument to show that refuse is an abomination to the eye, but is not that a matter for the discretion of the House? If sufficient sanitation is secured, notwithstanding that abominations of that kind are done, does it concern the matter? **A** Yes on some points, though, it would improve the sanitation. I do not say any one should take himself altogether at the necessary amount of it required, when the most potent with a little bit of trouble, would give better resistance. Why is it necessary that a more should only breathe the stink quantity, or the noxious quantity, when you can get rid of it with less than you?

15425 Q Ref 4 does not follow that, even with the obstruction you refer to, you will get only the necessary oxygen. You might get less than the necessary oxygen.

There is another reason—the danger that might arise from this rollout.

19429. Dr. Lipton | There is nothing in  
19430. Mr. DeLoach | What danger?

19421 45. *Example 7* There might be a leak of gas coming from that rubbish, or sludge.

14137. Mr. Bate asks: "Then do you suggest that nitrobenz should be taken out of the mine?"

104313 Mr. Quagmire: Not impracticably. Mr. Tower says the value is allowed to stop there, and now we need an alternative to take it out.

1892. Mr. Wright: That is a matter, in all respect, for the Commission to consider. I am putting the question before them from Mr. Hunt.

1940s. <sup>Q</sup> Do you consider there is a danger latent in having this accumulation of refuse? <sup>A</sup> It is possible, assuming that the air traveled the other way to the way I illustrated, these places would be

getting the best of the war, and the phantoms might be dangerous, but his Holiness claims that it should be left to the Monarch to decide. Well, I claim that I have a perfect right to complain about it, and I

have complained about it, too, in my reports. Of course, I have not seen the Government inspectors' reports, and I do not know whether they complained about it.

15411. Mr. Robinson: Q Did you complain about the restriction? A I complained about the interfering with the constitution.

1818b. Q. At the place you complained of, was the vegetation sufficient? A. There was sufficient to enable you to grow potatoes at the foot of the rock.

14100 0.5 apart from the maximum quantity, was there any defect in the translation? As I have found

Just with the plain fact I refer to, that the constitution was not adequate, in my opinion, for I am not allowed to express my opinion—that is for the Government Inspector to do.

19440 Q. If you thought that the ventilation was defective, and that the vapors were being  
imposed by the removal of this refuse, you had a perfect right to say so, but if the ventilation supplied

is in compliance with the Act, even though there may be an obstruction of justice. Both of the authors, I really do not see that it has anything to do with the matter." J. Linn.

1346 Mr. Lasker: Q Do I understand that you think that the Manager should, at least the right to  
1347 allow any refuse to be admitted and cause danger any more than he should have the right to allow anything

35142 Q Now, I understand you don't to say something about General Managers interfering with the

Managers of the unions, who are responsible? A: I am afraid it will hardly come within the scope of the Commission's remit.

1949 Q. Well, the Commission have to make recommendations for the better management of colonies if possible? A. It is a case that came under my notice, in this effect. There was one General Manager

those Colliery Managers direct them these overhauled man-ways, certainly, the men under the Act for improving and their duties, but, in this particular case, they had to take

They indicated directly from the General Manager as to the workings of their mines, and, in one instance, at some under my notice that although a fat was lying on the ground—[interrupted].

[1944]. Mr. White.) It might look like Mr. Devere got this from the General Manager, or from one of the Managers of the company. I had this information from one of the Managers 23 months. The only

evening that I bring this up is that a few days should have been allotted some six or seven months ago, to establish that value in a case at rest, and the Managers' constraint is that he could not get the money.

to track it, or you'll re-input the orders to put it up. I believe it is in course of revision now.

4. He expressed strongly to me the wish to get the film started. The only condition they had was that the film should be made in the summer of 1934, and during that time on a small scale.

natural resources, assisted by a steam jet in the west drift, and, during the last six years, a considerable number more of men have been employed, and, the last time I was in, I found the same

15440 Q And I understand you to say that you were informed that the General Manager had —

18847: JF: Selection: \ @ The General Manager @!?" A. You

18445 Q. Have you any proof that he did?

18446 A. No, Your Honor. I do not see that this is a matter which the Commission could take cognizance of.

increase, after all, the Manager might have a strong opinion with regard to any improvement, and the power of the colliery, as the directors of the Company, might block her just as much as an intermediate.

Q. Mr. Grace Smith? This question came up at the request, and it appeared to me fair to be

important, because it is an abuse that, although Mr Rogers was the Hanger of Means, Kenneth Meigs he really had no power whatever of spending money without consulting somebody else who was even less

and who was less responsible than he was. He said he had to power to spend money without reference to anybody else. It seemed to me to become a very important thing to clearly ascertain how far

Manager's operations, as a responsible person, are to be controlled by somebody else in the background called on credit as a criminal witness who was not have the direct responsibility upon him, and not on

passion the patent of shaking the face play of the Manager's own face upon management, and the three members like upon the Manager. I think Mr. Rogers was examined with regard to the meeting.

of sufficient safety lamps for the mine, and I think he would be had no power to buy them without the permission of some person.

percentage of nodes per day. 2003.

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Revised MS. Received 10 February 1999

testi. Mr. Wind: No. I think he said that he might use his own discretion in spending money for religious purposes, but for extraordinary purposes he had to consult someone.

ordinary purpose, but for extraordinary purpose he had to consult someone (HAGG: His Honor). It is suggested then that it comes to this, that the Navigator appeared within the precincts of the Ash as practically a dancing in some cases.

[Sings: *My Favourite*] That is it.

0043) *We Agree Small* : I do not indulge in any such extreme language as that it will

1a432. *Ab. Nivari*? Is first what is suggested by the name?

1942. Mr. Jones: Is that what is suggested by the question?

1943. Mr. Davis: That can be suggested, but what I want to put is that there is another side to the Commission right take into consideration whether a Manager, being made responsible for some sort of measures or outcome, should be under the direct control or responsibility of somebody outside who does not share his responsibility.

18218. M- Bruce [1989] : I am not submitting this as a proposition, but all I am conveying is: in that

It is a question that it might be important for the Commission to take into consideration, if anybody is prepared to offer evidence on it. Your House sees that the Manager has a certificate; the agent need

authorities a certificate of his. Therefore, the Manager who is directly responsible for a disaster of this kind may have taken from him his only means of livelihood, his certificate. At the same time he may have been forced to leave his home and his family, and he may have been unable to find any other means of livelihood. This is a very serious situation, and it is one that must be avoided.

have been in the position—I do not support him were of a man whose office opens to be something, but says, "I am handicapped, I have no power of expansion." It might be that the Manager was a certain degree of immaturity, but had not the courage to leave the expenditure and call me his last be thought.

thing to be successful, but had not the power to make the expenditure, and did not have such a strong interest in the expenditure of the rate immediately after him, to make the suggestion that the expenditure should be more real. There is a suggestion that I think the Commission cannot do it, in order to

we have these two parties stand out towards the other. There is Mr. Rogers, who may be deprived of his constituency; and yet there may have been someone contributing in some way towards this disaster.

a hulk, really, unless brought about by other people. I am making no suggestion that it is a fact at all.

19409. Mr. Moore ] It may be suggested the legislation should be brought in here to permit the rail  
Manager of the mine from being anybody else than the man who may be called the lay manager  
under the proposed legislation. It is another case of the same sort of amendment. It is reasonable.

1946G. Mr. Webb: That is an error. It is not under the Act at the present moment, it is requested, and nobody else. He is liable to prosecution.

1944. Mr. Bruce Smith: Yes; but the Managers asked they had no objection, when it was known that the other had no objection to him. I only suggest that the Commons should consider the relative positions of these two persons, if any confusion is offered.

15465 *Mr. Meyer*: It all seems to me to be a suggestion of dummying to a certain extent.

1844: Mr. Ebenezer Smith.) It only shows the difficulty of putting it into words, to express the exact expenditure of the same.

Likely shade of meaning desired. Words give the general colour, but it is very difficult to express the exact shade of meaning. What I want to say is that the agent need not necessarily have a worldwide or

all, and, therefore, though he may be equally liable with the Manager for some gross act of omission or commission, the Manager may, in addition to that, lose his certificate. If you look at the Art. and if you read it, you will see that it is not only the Manager but also the members of the Association who are liable to the Association for the same reason.

any - An agent, when  
of the owner in respect  
in accordance with the

1905 *Mr. Anderson*: By whom?

15468 Mr. Bruce Smith: By the issuance of the proprietor, and yet the Manager personally, though he says this want, might not be able, if he was a court, although he might think it absolutely necessary

to locate that expenditure without consulting his superior, the agent  
18407. Mr. Robinson: But, supposing there is no General Manager and no agent, he has his Board of



used. They were sent up by Dr. Robertson, and I was surprised to see them, because we did not require them." So that, so far as that goes, he made no request for relief there, and he had not been relieved there. I have read through this so far as I could, and I say that Mr. Rogers gave no evidence of that kind. I take the general objection on these grounds, that the mere Manager is there for one purpose - to manage the colliery, with respect to the safety of the workmen employed, with regard to the interests of his employers, and to get the best output possible. He has the responsibility now upon him for the Act, which says that he shall be responsible for the safety of the men, and which provides penalties for the breach by him of the general rule and special rules provided for his guidance. I suppose, in every commercial enterprise, there is somebody in command of the plant, and where the Manager, then, is always a fixed, it somebody who holds the pursestrings, and it is independent, and in that sense must control the management of the colliery itself. It seems to me that the inquiry is absolutely false on these facts, inasmuch, whenever Mr. Rogers was asked, no matter whether it is in court, where he is, or heard at Durdan, as a Manager of Durdan, if he wants money for ordinary purposes of the mine he has the right to spend it, but if he wants money for extraordinary purposes he has to consult the person who holds the purse, and nothing brought before the Commission would, I believe, raise there to state the position between the person who manages the mine and the person who holds the money.

18413 Mr. Bruce Smith | I do not know whether that question is before the Commission now.  
18416 Mr. Rogers | It is doubtful whether it is within the scope of the Commission, as whether, as the suggestion itself, there is anything so laughable that the Commission can go behind it.  
18417 Mr. Bruce Smith | There are two fairly different propositions. I now understand Mr. Wade's saying that the evidence which a witness is willing to give is so strong that it really seemed to constitute an evidence.

18420 Mr. Wade | I did not say that.  
18420 Mr. Rogers | That is not what I meant by saying "whether there is anything to get behind it." I did not mean to allude to that. I meant to allude to the suggestion itself, which is, that the Legislature should be asked to come in as some peculiar way between the Manager of a mine and the proprietor, to prevent the proprietor having the right to interfere between himself and the Manager any other interference.

18420 Mr. Bruce Smith | I do not put that proposition.  
18421 Mr. Rogers | Well, what is it, then?  
18422 Mr. Bruce Smith | All I am contending for at the present time is that, set only here the Commission power to consider the relationship between the agent and the Manager but that it is directly within the scope of the Commission under those words. "Further to make any recommendation affecting the general management of the mine." Suppose the evidence that may be forthcoming will show that the relationship between the agent and the Manager was such that the Manager had, and the Commission of some that he ought to have, as a responsible person, partly it would be within the scope of the Commission to consider the relationship, as to whether it ought not to be altered, because, whilst the Manager is the Manager, there is a man over him who has a greater power of supervision than he has, and, therefore, it is clearly an issue, as part of the administrative machinery of the mine which the Commission might think is so ordered as to confer towards the possibility of danger. That is so much, as to the general proposition. Now, with regard to Mr. Wade, I have some recollection of taking a question to some examination. Mr. Wade has not read anything from some examination at all. He has read something from the examination by the Crown.

18423 Mr. Wade | That is all I read but.  
18424 Mr. Bruce Smith | I have found something else. The Counsel asked some questions as to consideration on my cross-examination which I have not found any, but I find, at the foot of the page, that, that the Manager said, "I am not at all times for the safety of the mine without consulting Dr. Robertson, I always consult Dr. Robertson before I purchase anything required at the mine." It was that answer which suggested to me that there might be a situation of things under which the Manager, who is primarily responsible, was excluded where a question was a matter of opinion, because an agent very often is the agent for several mines. Take the case of Dr. Robertson, he is the agent for many in Newcastle, not for the agent for mines in the South Coast. He may be up in Newcastle badly employed, and some great emergency may arise in the Newcastle Mine which will involve expenditure. Well, it would be an attempt to the safe management of a mine that in a case of that sort the Manager should not have to consult the agent where an emergency arises. All I am contending for at present, and I reiterate again that it is a question of which the Commission cannot say, "We will go into it."

18425 Mr. Rogers | I tender this evidence as this, that the Commission may be in respect to the Legislature that such persons as witnesses or agents should be prohibited from giving any directions to the Manager which may at all result in operations which the Manager does not propose to take any longer, and it should be a serious offence for either a witness or agent to give such directions. And, further, all directions given by these agents, agents, or General Managers respecting the safety conditions of the mine, which may affect the safety of the workmen, should be put in writing, so that they could be on record to fix the responsibility if anything should happen.

18426 Q. I think that is what you suggest, Mr. Rogers? A. Yes.  
18427 Mr. Rogers | The suggestion is that the directions which the agent or General Manager, or agent, were given should be put in writing, to the Manager, and therefore be recorded, and that such an absolutely responsible person should be prohibited directly from giving directions which may affect the safety of the mine or of the workmen. I might point out that on page 22 of the evidence (Inquest) Mr. Rogers stated this:-

I know how close to the agent for the Mount Kembla Colliery, I believe there is an agent. I have never heard who the agent is, I am a mere spectator, if I wanted to know a better I could have come upon inquiry, I would never have been at all with Dr. Robertson.

Now, he did not know who the agent was, and apparently Dr. Robertson is some person as far as the Mount Kembla Company is concerned absolutely responsible, but Mr. Rogers had to refer to him.

18428 Mr. Wade | That is not the evidence at all. The evidence is that he was on his own responsibility in it, thereby it necessary.  
18429 Mr. Rogers | It is not a question of the relation in which Mr. Rogers stood to Dr. Robertson or anybody else.



18490 Mr. Lyngby.] With that illustration before the Commission, and with the illustration given by Mr. Bower, where the Manager was present, I am putting up a bar, although he thought it necessary, by the General Manager, who was not reachable, I submit that it is a matter for the Senate consideration of the Commission, as to whether they shall suggest to the Legislature some limitation as to the directors which may be given by those people, and that any director to whom they are given should be put in writing 18491 Mr. Robertson.] Do you wish to say that a Manager thought necessary to incur certain expenditures, that expenditures must be incurred, whether the directors thought it necessary or not?

18492 Mr. Lyngby.] Yes.

18493 Mr. Robertson.] But, if the Manager does not feel satisfied with his position, under those circumstances he should resign.

18494 Mr. Lyngby.] Yes, but that does not help the man, Mr. Robertson.

18495 Mr. Robertson.] He could criticize the men if he thought the men was dangerous.

18496 Mr. Lyngby.] Yes, but I submit that, if the directors persuaded the Manager from carrying out a recommendation for the safety of the workmen, it would be a criminal action on the part of the directors.

18497 Mr. Robertson.] Then you would make the Manager superior to his directors.

18498 Mr. Lyngby.] Superior so far as the safety of his workmen is concerned, because he knows the danger and they do not. I submit with all respect that it is under in which the Manager should be absolute, and that the directors should either accept his suggestions, where they are essential to the safety of the mine and the men, or not attempt to carry on the mine at all.

18499 Mr. Bower.] After all, it all so much to say, whether or not the Legislature ought to be asked to interfere, in the interests of the mine, between the Manager and the proprietors, and to give the Manager more specific powers which may now exist as against the primary rights of the proprietors. That really comes to the original form of the question that I am thinking of, because it cannot possibly be suggested, as a matter of course, since, that it is possible to limit the right of a proprietor to employ an agent, and for that agent to deal exclusively with the Manager. From the nature of the exact contract he suggested that that right can be limited. Take an instance: the proprietor may be an old lady living in England. Well, surely she has got a right, and no Legislature would think of interfering with her right, to appoint a Manager for the whole of her property in New South Wales, and to give that Manager any unlimited powers which she thinks proper to give in connection with the management of her property. So that the consideration of the agent cannot be dealt with at where it comes in the question of the protection of the miners, then the question is whether or not the Legislature ought to protect in some way the Manager of the mine. The Manager dealt with by the Act is not in relation to his management, no matter whether it is against the proprietor, or against the agent, or against any other person who happens to be a person who has the disposal of the money with which the mine is to be managed. Well, that does seem to me to be a question, which, perhaps, the Commission would have the right to consider.

18500 Mr. Lyngby.] There are what are called "agents." Seriously, that is all. Mr. Robertson was in Kewdale, a lawyer, not an agent; but, under the original Act, there was no investigation of the office of owner, and, therefore, apparently, in Kewdale, Mr. Robertson was absolutely trustworthy person.

18501 Mr. Bower.] There is no definition of the position of an agent, except a suggestion that there may be, and probably will be, a person standing in the position of agent of the owner of the property.

18502 Mr. Lyngby.] But, in the case of a witness, his opinion may override the opinion of the Manager, and it may not be even the wish of his Board of Directors. I suggest that the Legislature would provide that any directions given by him to the Manager should be placed in writing, and any such directions which was opposed to the Manager's idea of what was required for the safety of the mine should be brought under a penalty.

18503 Mr. Bower.] I am dealing with the broad question of whether the position of the Manager is relevant to the proprietors, whether the proprietors act through an agent or not, shall he deal with by the Legislature.

18504 Mr. Bower Smith.] There would be nothing very novel in that, as stated, by your House, because the ordering by the Legislature of the safe-camps into a mine, if the Manager wishes it, is an interference with the rights of the proprietors.

18505 Mr. Bower.] It does appear to me that, looked at in that light, this is a question which the Commission may possibly go into.

18506 Mr. Wade.] He has the power now. If he thinks it is necessary for safety, and the directors will not give it to him, he can say "The men must not work there."

18507 Mr. Bower.] This comes to the proper question that there are interested persons who stand in a rather unusual position to the proprietors. It is not the mere control of an agent which would satisfy the Commission to give the question. It is the position of the Manager in relation to agents having control over him that seems to be material.

18508 Mr. Lyngby.] Mr. Bower, the objection which you have stated to the Court as to the power of the General Manager as the Manager would be met by the suggestion I have made that all directions from a General Manager to other persons be given by a man thought should be put in writing.

18509 Mr. Bower.] There is one of your suggestions, which are coming in continually. You say "intercept him." But I take it that the agent is responsible to somebody.

18510 Mr. Lyngby.] But I have in mind the owner.

18511 Mr. Bower Smith.] I submitted that he was equally responsible, obviously, with the Manager, but the Manager has a confidence to lose as well.

18512 Mr. Lyngby.] Any person other than the Manager giving directions to the Manager should get those directions in writing? A Yes, it would be a safeguard to the mine, there is no doubt about that.

18513 Q. And any direction given contrary to what the Manager thought essential to the safety of the mine should be made an offence? A. If it was carried out by mine, yes. If it was only a direction, and the Manager refused to carry it out, which he might do, then there would be no necessity to make it.

18514 Q. Is there anything else you wish to say upon that point? A. No, it is quite sufficiently covered.

18515 Q. Then, I understand you also desire to suggest an amendment in General Rule 39, regarding the appointment of the check-inspector, and you desire the words "not being among signatures" struck out, and the word "working" before the word "meeting" struck out? A. Yes.

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- 18217 Q What do you say in support of that? A Well, the people in London there, "not being mining engineers" were objected to by the Western Engineers' Federation when the Act was passing through the House. They claim that they should have the right, if they think it, to employ an expert in their interests. I think it is quite reasonable that they should. And so far as the person himself is concerned, according to legal opinion I myself during the time of the election, have got to look for work, and to be actually waiting at the time pending the election. In fact, I was engaged six weeks at the railway last year.
- 18218 Q You think those words, "not being mining engineers," and the word "waiting," before the word "must," should be struck out? A Yes.
- 18219 Q Is there anything else you wish to say? A No, I think I have fairly covered the ground.

Concurrences by Mr. Wade.

- 18220 Q Yesterday afternoon, when you were talking about the black list, you referred to men being dismissed at East Grinstead. Those men were not deprived of employment elsewhere. That is what the black list means? A They got the recommendation before they had occasion to go and look for work.
- 18221 Q And the same Manager took those men back? A Yes, under various conditions.
- 18222 Q But he took them back? A Yes.
- 18223 Q It does not matter what the conditions were. You said those men were dismissed because they were unskilled? A I said distinctly that it was reasonable that they happened to be the three officers and the committee of the newly-formed lodge.
- 18224 Q That is the suggestion you wanted to convey? A Yes.
- 18225 Q Has not it come to your knowledge that those men were working under an agreement not to join the Newcastle Union? A Yes, I know it, at least, I have been told it.
- 18226 Q It has come to you officially, has it not? Did you also know this that they were allowed, if they thought fit, to join the local union? A Exactly, I suppose they were. I do not know whether they were or not.
- 18227 Q You went up there to inquire into it? A Yes, but history has been objected to all along. I do not know it officially.
- 18228 Q Do you know there was a local union there? A No, I do not.
- 18229 Q Were not the three officers, that three men, behind the back of the Manager, issued a branch of the Newcastle Union? A Yes.
- 18230 Q And that is why they were dismissed? A Yes, but will you allow me to give the reasons? Why did the Manager select eleven men out of some hundreds he had there, and allow the others to go to work, and not those certain men? A No.
- 18231 Q Did not exactly the same question arise at South Grinstead? A No.
- 18232 Q The introduction of a branch of the Newcastle Union? A Not that I am aware of.
- 18233 Q Are you prepared to say that question did not arise? A I am prepared to say that I am not sure that the men were discharged for the same thing.
- 18234 Q It was for the formation of a branch of the Newcastle Union there? A There was no objection, I believe, but the Manager discharged the men, he said, I cannot be held out against them, not because they joined the union. I know that.
- 18235 Q Were you in Newcastle last week, or the week before, and did not you hear Mr. Curley say, in the Arbitration Court, that the reason that they were discharged was because they were unskilled? A I was not there.
- 18236 Q You said to Mr. Loughton that Mr. Jackson Thomas said that the union was not safe, and he could not get a job? A I did not say that. I say there was a banishing on the ground there for twelve months, and it could have been back in any time during that time, and it is not finished yet.
- 18237 Q But you did not suggest that there was a danger? A I do suggest in my last report that the situation is totally inadequate for the men.
- 18238 Q Do you suggest there is a danger at the present time? A I suggest that the men are working in inadequate conditions.
- 18239 Q Is there a danger? A It is dangerous to look.
- 18240 Q Is there any long enough? A They will be as long as they have fresh air.
- 18241 Q With regard to the appointment of inspectors, do you wish, under any circumstances, that the miners should have the power to recommend? A Yes. I do not see how there could be any harm in it.
- 18242 Q And would you give them the power to stand on the recommendations, to press it home? A I would give them all the power possible to get their business appointed, or sufficient cause shown why an appointment should not be made on the recommendations.
- 18243 Q Then, if an objection is made to the recommendations, you would give the miners power to still press their recommendations? A If the objection taken was a reasonable one, I would not ask to go any further.
- 18244 Q If the miners thought the objection was not reasonable, would you still give them the power to press it further? A Yes, to press it as far as they could.
- 18245 Q Where would they press it? A They would ask the Minister for his reasons.
- 18246 Q Still to press the Minister? A Yes.
- 18247 Q And if the Minister declines to yield to the pressure? A We would have to take a back seat or else go on the Government.
- 18248 Q When are you going to do if the union recommended a man? A We have no objection whatever, they can use their power and influence too.
- 18249 Q If their recommendation of their man does not suit the miners? A The miners are in the position, that they have got to nominate experts. They cannot be said to be very rich in the numbers. It is not the appointing one of these men matters.
- 18250 Q I did not say a word about self-interest. If you found that the miners' recommendation was detrimental to you? A We would object to it.
- 18251 Q You would bring pressure to bear on the Minister to overrule the miners' recommendation? A If the miners' recommendation was a recommendation of an individual, no preference is one nominated by the miners, I would go for the miners' nominee. I am speaking personally now.
- 18252 Q But I am taking the case where you disagree with the miners' recommendation? A I would do everything I could to stop it going farther.



18718 Q And you would not say influence you could to carry your point? A Yes, why should not I?  
18719 Q Although the Minister says, so all good men have a difference of opinion with you? A Well, then, if he gives his reasons for his opinion, I would not do it. If I were satisfied that the Minister's reasons were sound, I should not oppose it.

18720 Q You must say things you wish to be convinced yourself of the validity of his objection and of his *bona fides* too? A Yes, if the positions were misstated, I would be satisfied. They could not be the same unless that I could see.

18721 Q You would not be content with the Minister's agreeing with you, although you have his disagreement was in a perfectly good faith? A No. I do not say that. If the Minister gave good reasons for his objection to our measure, so far as I was concerned, I would absolutely fall in.

18722 Q That is not the question I asked you? A But I am going to express myself in the way I think fit.

18723 Q I ask you this: if you do not agree with the Minister's objection, but you are satisfied in your own mind that it is perfectly *bona fide*, you would still have to make your view? A If it is *bona fide*, I would not; if I disapproved of his reasons, I would certainly not all the influence I could to get my measure pushed forward.

18724 Q Whether the Minister was acting in good faith or not? A Yes, although an alternative view has been suggested here that I approve of, and, to go further into the matter, I would tell you that in the beginning, when that recommendation was made, I believed in a responsive examination.

18725 Q Would you outline a responsive examination on paper alone? A Of course, the amount of experience a man had should be taken into consideration beyond that. You do not want the student to travel round the map with a man to see what his practical knowledge is, surely.

18726 Q Then you are content to have it removed entirely from practical influence? A That is what I would like to see.

18727 Q Is that man you would not ask for the right to recommend your own man? A I do not suppose they would pass it if it were entirely free from practical influence, although I do not mean to say that there being the power to nominate, between the health is practically speaking, in the hands of those men.

18728 Q What is the good of the power of nomination if you cannot enforce it? A You cannot enforce any nomination, so far as I know.

18729 Q You said you would try? A I said I would try; but there is a difference between trying and being able to.

18730 Q But if it is put in the hands of a non-political Board, would you still claim the right to try and force on that Board your nominees? A No.

18731 Q Now, with regard to these manholes, in the first place, how many collisions are there in the Newmarket District that are waiting with a man rope on a road which is also the travelling road? A A dozen or more, perhaps twenty.

18732 Q Are there the main road for haulage, and the haulage road is also the travelling road? A I suppose there are twenty. I could not name them from memory.

18733 Q How far apart are these manholes in these haulage roads? A I think they comply with the Act, 10 yards.

18734 Q Do you mean to say that a man coming out of a mine and looking for a refuge would not be able to find a hole within 10 yards? A He would be able to find a hole under 10 yards.

18735 Q Without any trouble at all? A That is a different thing, when they are whitewashed, he would have no trouble.

18736 Q The furthest distance he would be away from a manhole would be 5 yards? A Yes.

18737 Q And yet you would want the whitewash to enable him to find the manhole? A Yes, he might go right past it.

18738 Q If it is a dusty road, it would probably destroy the marks of the whitewash? A No.

18739 Q If the road was dusty, how long do you think the whitewash would show? A For two or three years it would leave a distinctive mark.

18740 Q Although it is dusty—although the dust is so thick that you could not see the manhole without the whitewash? A No, I do not say he could not see without the whitewash; but the difficulty is that a man carrying a wheel barrow on a mine like that could not see it, because all his attention is being taken by the light.

18741 Q You say, although he was only a little way, he could not see it? A He could not see it unless he was right against it, and watching for it.

18742 Q And you say that the whitewash on a main road would stand for years? A Yes, they do stand it. I have seen them stand so.

18743 Q On a dusty road? A Yes on a dusty road.

18744 Q What do you want the travelling road 4 feet high for? A For comfort, and, as it is generally used as an artery, it is also the better for being a few feet.

18745 Q Do you think the difference between 4 feet 6 inches and 5 feet would make much difference in the resistance? A Yes, it makes a great difference.

18746 Q And could not that be remedied by having sufficient appliances—cannot you reinforce a man just as well if it is 4 feet 6 inches on the average, as it is 5 feet? A I will tell you what it is — [interrupted].

18747 Q Can you do it? A Yes, you can do it with wheels as well as height.

18748 Q Then, whatever the height is, or whatever the width is, does not the resistance depend on the power you apply to it? A I suppose it does. Do not ask me expert questions.

18749 Q You can answer that, can you not? A It depends on the pressure, certainly.

18750 Q So that what you want the extra height for is for convenience in walking? A Yes, it would be more comfortable to walk.

18751 Q Here you say also what it would not do break down the stone? A I do not know that it is done in the district.

18752 Q I ask you if you know what the cost is? A No.

18753 Q You have no idea what the cost per yard of breaking down the stone is? A If I had to put in a contract for it, I suppose I could work out the cost.



Notes.—W. B. Ross, to Folger, 1883.

18158. Q Can you give us now any idea what the contrivance is? A I could not tell you; it would depend upon the conditions.

18159. Q Take an ordinary roof in the Newcastle District? A Well, I know some of them that it would give very well in such. They would get well out of it. The most difficult ones to break in the Newcastle District are those 2 feet.

18161. Q Can you tell me the pitch? A It would depend on what the roof was composed of, and where the wind was.

18162. Q Then when you want the wind 10 feet high for the convenience of getting in your work? A Yes, and for getting out again, and for the horses. But I believe it pays to do that.

18163. Q But you have no spans, and you have made no calculations? A No, but I can control some relations with others.

18164. Q But you have no idea of the force in connection with Mines? A I do not know what it would be.

18165. Q You need that out-throwing 20 yards apart, now, the horses, and you cannot make the horses do that, as the men have not taken any that could? A I mean to say that, if you put the out-throwing every 20 yards, it would not take so much time to take the air.

18166. Q Did you say that they have not time to put it up absolutely straight? A I think under the present conditions they have not time to put it up absolutely straight.

18167. Q Do you think, in a general way, it should be straight? A I think it would be unwise to expect it to be straight.

18168. Q Do you think, in a general way, it should be straight? A It would be better if it were straight.

18169. Q Do you think it would be an advantage to have a certain amount of air coming about the mine? A Yes.

18170. Q Do you think it would be an advantage to have a certain amount of air coming about the mine? A Yes.

18171. Q I am taking the given pressure, first of all, (it doubtless or not to have the air passages absolutely straight, as the more some set to work straight, the better it is.) A Well, generally speaking, taking a split of air with old workings behind it, it is generally better to have enough air to make a little off it to keep the old workings away. But we are speaking of two different things. You are asking me now about the question that was asked about the working place.

18172. Q You want the experience that the men have not time to set to the horses or light (do you think it is necessary to make it so tight in the working place)? A As straight as possible.

18173. Q Do you mean that they have not time to make it so tight as possible? A I mean to say that, under the ordinary conditions, because in most cases, it is long, and it is not straight. It would be a very expensive thing to make because entirely straight.

18174. Q Did you ever hear of any man who ever tried to make it straight? A Yes.

18175. Q Where is it now? A The horses to get up, and make it over as possible as light, where it is necessary for the work.

18176. Q What is the spread work? A Well, in some cases, like this—I will try and explain it to you: although I do not know what you are doing at all. They might have occasion to put in a leading wind in the boundary, and there or there or perhaps, the horses and the whole of those horses would depend upon one single horse in many the current in. In those cases they have to make it as nearly as possible air tight.

18177. Q Is that an exceptional case? A Not an exceptional as you might think.

18178. Q Is it an exceptional case from ordinary work? A No, you will find it is nearly every case.

18179. Q You may find it in any mine. Is it an exceptional thing to have it in any mine? A No, it is not exceptional, of course, it is not general.

18180. Q Now, I understand you to say that, under ordinary conditions, you cannot compare with the atmosphere the current of air at the foot, is that so? A Under the ordinary method of limiting working place, the current is not strong enough to be set to move the atmosphere.

18181. Q That is under the ordinary conditions of a mine? A Generally speaking, that is so.

18182. Q Do you mean that either some instrument very delicate, or some special arrangement of the machine, to get sufficient current to overcome it, at the foot? A Well, you could, in all probability, do it by making the machine tight at the foot end, and by making a small enough area with the horses, do it.

18183. Q As things are at present you can get quite sufficient current from the deflection of the light into the nature of the current at the top? A Where sufficient to overcome the air. And I really myself, I do not know whether it would satisfy some of them.

18184. Q Is not that a common way of doing it? A No.

18185. Q Have you ever seen a mine where you could not get the light behind the horses? A Yes, it is very rare.

18186. Q Have you ever seen it done? A I do not think I need not even a specific instance where I have seen a difficulty do with that.

18187. Q You have not a good word to say for the disputes? A I have some good friends disputes.

18188. Q And yet they would not take the trouble to do even that, they have the key to do their work? A I suppose so, and must be satisfied in every way.

18189. Q Then, with regard to the owner's side, I understand you want a large big enough to carry away some, as a mine? A It would depend upon the number of men in the mine. They are to be put out in a hour.

18190. Q I am asking you for information? A I cannot give it to you, because, if there were only twenty men in the mine, it would require a large to draw out men, but in a colliery with 500 men it would take a large rope.

18191. Q What would you ask for in that case? A They are asking those that the plant be large enough to let the men in so fast.

18192. Q I think you could want a rope to carry too men? A Yes.

18193. Q And you would also want corresponding authority to back it up, a corresponding strong rope, and corresponding power on top? A Yes.

18194. Q Have you any steps of the extra cost involved in supplying an escape shaft in that way? A No, and I have not in mind of the cost of keeping those men down for five or six hours and they cannot get out.



19400 Q Have you any idea whether it costs \$125 or \$1,000? A It might cost \$1,000, and it might not cost more than \$25.

19401 Q And you are not content with the expense that they have on many occasions on the opposite shaft? A No, the appliances are very expensive on many of them.

19402 Q They have appliances there for getting men up? A They are compelled to have them by law; but they are so expensive in many cases that I don't say, if there had been reasonable machinery there, the men would not have thought of asking for more.

19403 Q You don't say that the appliances there do not satisfy you, because they are not sufficiently fast in working? A I think they are simply an excuse of the boys.

19404 Q And you want these appliances displaced, and expenditure more put on their place? A They should have more expenditure made than they have got, at any rate, better means of getting the men out of the mine.

19405 Q Now, you have made some reference to Seshon, and the safety-lamps; is not it a fact that the men refused to have these safety-lamps introduced? A I said so, yesterday, that they objected to use them, but did not refuse them, because they had not the opportunity of refusing them. They were not asked to take them on.

19406 Q They were given the opportunity of saying whether they would consent to it? A They had nothing whatever to do with it. The men took them as soon as they were given to them.

19407 Q Do you mean to say the men made no objection to it? A They objected, but they did not refuse them.

19408 Q They made an objection to using them? A They said they did not think they were necessary.

19409 Q And, in consequence, the Manager did not have these lamps taken for the first lamp? A The Manager, as soon as he got the lamps and the lamp-frames ready, gave them to the miners, and they took them.

19410 Q And did not the Manager at Seshon put in the miners a proposition as to whether they would have safety-lamps some considerable time before they were introduced? A I do not think so.

19411 Q Did he give them no notice? A The Manager simply gave the men the lamps when he was ready to give them to them, and the men took them.

19412 Q Do you mean to say the men did not get notice? A I mean to say it was common talk that they were going to be introduced. They saw the lamps there and they knew they were going to be used, but I do say that the Manager did not say to them, "Will you take the lamps if I get them?"

19413 Q I did not say he put it in that way? A Which way did he put it?

19414 Q Did he tell them he was going to get the lamps? A I don't know whether he made an official statement.

19415 Q Did he make a statement, official or unofficial? A He told me.

19416 Q Did he tell the miners? A I do not know, he told me.

19417 Q Did the men object to it? A I say they arrived a resolution that there was no necessity for the use of the lamps.

19418 Q Relative? Q Was this resolution passed prior to the Keokuk accident? A Considerably.

19419 Q And the consent to get them was after the Keokuk accident? A I do not think I would get that any way. They consented after a return accident had taken place on that mine; but, mind you, there was a notice put on the pit top that the lamps had to go in on Monday. It was a question with the men as to whether they would go to work on the Monday or not, but a certain number took place in the mine on the Thursday before the Monday I think, and at a meeting that night, the pit had to knock off, and the men had a meeting, and they showed their previous opinion.

19420 Q What was the accident—an explosion? A It was a slight explosion.

19421 Q What I want to get from you is this: The objection to the lamps by the miners was raised some time prior to the Keokuk explosion? A Yes. It was common talk for a couple of years that the lamps had to go into Seshon, and the men and there was no necessity for it.

19422 Q Then, their consent to use the lamps was not until after the Keokuk accident, and after an explosion at Seshon? A I think, somehow or other, that the Keokuk accident had not happened when the lamps went into Seshon.

19423 Q You must have forgotten? A I am just trying to remember. Anyway, it was the accident that happened in Seshon mine that put pressure on the miners to the question of using such, but I say that that the men as far as absolutely refused to take the lamps in Seshon, because the Manager put a notice up at the pit mouth that they had to take lamps in on the Monday morning, and when the Monday morning came they took the lamps in.

19424 Q But would they have done so in the previous year? A I cannot tell you.

19425 Q Mr. Bower? Q They meant to refuse on the Monday morning, and it was happened that, in the interval, an explosion took place? A I told you that the men said there was no necessity for the lamps on their opinion. They did not say that they would not use them. They never said at any time that they would not use them.

19426 Q Did not you say the lamps were about to be put in on the Monday morning, and the men had decided not to work with them? A I say they might be decided to refuse them; there were many talking that way at the meeting, but the only resolution that was ever passed was that the lamps were not necessary, and subsequently to that there was a conference with Mr. Hamble and the local check-inspector and myself and the Manager, and Mr. Hamble distinctly refused to discuss the question as to the necessity of the lamps at all. He said that the Chief Inspector and I have had thoroughly made up their minds that it was necessary for lamps to go into Seshon, and he stated as so, and advise the men to accept without any protest. That is what took place, but, regardless the men refusing, I will tell you that the notice was put up at the pit mouth, and the men went to work and accepted the lamps.

19427 Q That was after the explosion? A That was after that slight explosion. It may have modified their opinion a bit.

19428 Q It was not yesterday that if a wall is about to fall the men should be withdrawn in time. What do you mean by rescue? Do you mean every single man on the edge side of the mine, or edge of that pit, or what? A It is a bit of an average, like this [pointing to the 35 acre plot on the plan], every man in the mine should have been got out, there should not have been a single man in the mine if that area of 35 acres was—[interrupted].



- 18601 Q You think the fall was \$5,000? A I say it's a piece of ground of that size was working, every man in the mine should have been out.
- 18602 A Did you ever hear of \$5,000 falling all in one piece? A No, but it might fall in thousands of pieces, and all at once.
- 18603 Q Did you ever hear of \$5,000 falling all at once one time? A Why should it not? It is quite possible that a piece of ground that size may have been working for some considerable time, and would come away right in the grain rods all at once.
- 18604 Mr. Robertson Q Did you ever hear of \$5,000 of ground standing firm which the pillars were supported? A No.
- 18605 Mr. Webb Q If there were only 2 men falling, should the men have been withdrawn? A No; the men from that section should have been withdrawn.
- 18606 Q If the men from that section had been withdrawn, would not all have been done, that was necessary? A It might have been so.
- 18607 Q What would you suggest besides withdrawing the men? A Get out of the way till she fell.
- 18608 Q That is withdrawing the men? A That is what I say.
- 18609 Q What else would you do? A I do not know that you could do anything else when ground like that was working but get away from it.

Examination by Mr. Bruce Smith—

- 18610 Q When that twenty-five or twenty-six propositions were put before your Petrolite Board, I suppose you spent some time in considering them? A Yes, we were about an hour there that day.
- 18611 Q There are a good many of them which you will admit now, after having considered them, involve a good deal of expenditure? A Possibly.
- 18612 Q I will just name one or two; there is a general proposal that first shall be put into all mines—do you know what amount of money may be involved in the substitution of the fire for the furnace method of ventilation? A It would cost a considerable amount.
- 18613 Q That is too vague—have you any idea how many hundreds or thousands it may involve? A It would depend upon the size and the size of the mine and the machinery.
- 18614 Q Do you know what the cost might go up to? A It might go up to \$5,000 or \$10,000.
- 18615 Q It might go up to \$10,000? A It might be as many hundreds.
- 18616 Q Now, with regard to the breaking of the coal—that might amount our money value? A It does extend over many miles.
- 18617 Q Had you any figures before you, as a body of men recommending these things as to what would be the probable cost of doing it? A We know the general cost of breaking under ordinary conditions.
- 18618 Q What is it? A As Wallace it is costing \$2 per yard at the present time.
- 18619 Q A superficial road? A A level part of the road or bottom.
- 18620 Q Did you go into that to consider what would be the effect upon some of the smaller mines by requiring that to be done universally? A Would you describe to me what you mean by the smaller mines?
- 18621 Q Are you aware that there are no less than forty mines in this country in which less than twenty men are employed? A I would except them.
- 18622 Q They did not say so? A I agree with you about as many mines being in the Colony.
- 18623 Q But the recommendations which you came down here to make before the Court, include no propositions whatever? A Well, I put it this way, you are hardly recognizing a mine as being a mine until it is in a condition to employ more than twenty men.
- 18624 Q But do not you know that these small mines come under the Mining Act? A I suppose they do.
- 18625 Q But, in your resolutions you have come down here to recommend to this Commission, you have made no reservation whatever? A I am prepared to make a reservation.
- 18626 Q But did you come in without any reservation attached to these recommendations? A We did not consider any mine such as those you have described.
- 18627 Q Then I understand you did not really go into the possible cost of the recommendations that you were making? A No, but we find it very necessary. We find plenty of companies changing the furnace for the fan, now, and I do not think the furnace is a safe thing.
- 18628 Q I want the Commission to know whether you gentlemen, sitting down there deliberately as a body of men, making proposals to regulate other people's property, personal, considered any other part of one than your own, is correct? A I will answer you this way, we considered the lives and the health of the miners only.
- 18629 Q As long as we know that the Commission still knew what other ideas they may have to look at? A Yes.
- 18630 Q Now, you have made a bold recommendation that all coal mines be required to have a fan. Well, I suppose this thought, although it may have entered your minds, really did not come up before you that, in requiring that, under certain conditions you might involve the mine in an expenditure which would so increase the cost of coal as to incapacitate the mine from being worked at a profit? A Yes, that question has been dealt with in every aspect, and we know perfectly well that, if there was not the strongest compulsion, there would be no difficulty.
- 18631 Q Did you know, or provide, that in making this bold recommendation in regard to fans, there were these forty mines to contrast with only six million capital to go on with? A No, we did not consider those mines.

[At 2 p.m. the Commission adjourned until 3 p.m.]

#### ATTENDANCE

(On resuming, at 3 p.m., Mr. W. E. Pratt attended to take shorthand notes of the evidence and proceedings.)

WILLIAM BOWEN, previously sworn, was further examined, as under—

- 18632 Mr. Bruce Smith Q Regarding what you told Mr. Robertson just now, did not the men, before they agreed to take the safety lamps, pass a resolution adverse to them? A They said that they did not think they were necessary.

18633



18060 Q Did you not measure them? A Yes, that was my opinion, but my opinion was qualified.  
18061 Q Did you not measure the men taking up that material—that you did not think the sub-  
language was enough? A With qualifications I did. I think I had a right to give that. If certain  
things were done—if you heated the roof high enough—I believe the men would be safe. I have always  
advised in business that they should break the main roads at least another foot or another six inches  
higher.

18062 Q Something about taking up the pillars, you said something about some gas coming out of the  
roof, where did the gas come from,—you spoke about an accumulation in a gas? A The gas itself  
may have given off kind of no gas. It may have come from the air filtering the gas from the working  
places. You may put it that way—that if the atmosphere of the mine carries a lot out of gas, and a  
little of that leaves the air, when there are cut-ways there the lot of the mine, it will accumulate.

18063 Q I wanted to know where the gas came from, whether it accumulated in the gas? A It came  
from the general atmosphere of the air.

18064 Q I think you said about that it is impossible to lay down any practical rule with regard to the  
rule of the Manager in a mine? A It would be difficult to lay down any definite rule.

18065 Q When you spoke of requiring a larger supply of air for the men I suppose you do not know  
yourself how much often a man, or a boy, or a horse consumes? A No, I know the general rule.

18066 Q What is it? A It is stated that 120 cubic feet of air per man, boy, and horse would be  
sufficient under ordinary circumstances.

18067 Q But do you know what the accumulation is? A It might be found.

18068 Q I want to know what factor operated in your mind when you gave your evidence. You do not  
know what the consumption is of either? A It would vary.

18069 Q Between what amounts? A I am satisfied that in some places it would require 500 cubic feet  
per man.

18070 Q I am asking you about the consumption? A I have seen it in print.

18071 Q Did you not remember when you were taking up? A No.

18072 Q I want to know what your extent of knowledge was? I am not an expert.

Examined by Mr. Robertson:—

18073 Q Your experience has been chiefly confined to the Newcastle district? A I had a little  
experience at Hume as a boy, and for a short time I was in the North western district.

18074 Q When you state that pillars of 30 yards square would be sufficient to meet all requirements,  
you are referring to the Newcastle district? A I do not think I need 30 yards square, I need 30 yards  
long. You can put in very little economy to save the roof.

18075 Q What width would you say? A Any width necessary to carry the strata above them.

18076 Q Supposing it were necessary to have 100 yards in the width? A If it were necessary to have  
300 yards, I suppose you would have to have three 100 yards wide.

18077 Q What about the cover? A It does not interfere with what I said about the cover. Cut-  
throughs every 30 yards are enough to carry the air in the working faces.

18078 Q But do you not see that the fact of having cut-throughs every 30 yards would be to limit the  
size of the pillars to 30 yards? A You could put in very much you thought necessary.

18079 Q Do you admit that it might be necessary to have 100-yard pillars? A Do you mean in width?  
You assume that 100-yard pillars are necessary. I have never seen the conditions where they would be  
necessary.

18080 Q If you were shown the conditions where 300-yard pillars are necessary, would it modify your  
opinion? A It would modify my opinion, but if you had to put 300 yards or 200 yards on to 30 yards,  
then you would have to carry 300 or 200 yards.

18081 Q What I want to know is will not the recommendation here the effect of limiting the size of the  
pillars to 30 yards? A In all the conditions that ever I knew of I never knew of a case which required  
pillars of 100 yards without cut-throughs.

18082 Q With the conditions that I speak of cut-throughs every 30 yards would be inadvisable? A I  
think that 30 yards is enough in every instance. If you had to carry it 100 or 200 yards you would  
suppose it to be put up very carefully.

18083 Q I want to advise you that there are some cases where it is necessary to have between 100 or 200  
yards in length, in order that the roof may be carried properly. You depend on the size of the pillars for  
carrying the roof. If it is necessary to have pillars 100 yards or 200 yards in length, and cut-throughs every  
30 yards would be out of the question? A I think you are assuming something that is hardly likely to  
come into existence. I have never yet heard of conditions where it is necessary to have 100-yard pillars.

18084 Q I am showing you conditions which exist at present, and you state easily are those to increase if  
you like? A I would like to have the men to see them, because the conditions are so extraordinary that  
they would not apply to ordinary cases. I was not talking about ordinary cases.

18085 Q You are making the supposition which I state all possible conditions? A I do not agree with  
that, because there are exceptions in every mine. I gave an illustration of one this morning, when I said,  
that when you are taking coal from the locality, it is necessary to carry on for a long way with handles,  
but in that case a handle is specially put up.

18086 Q You will agree that if you have 100-yard pillars, you cannot have 30-yard cut-throughs? A No,  
you cannot.

18087 Q They would have the effect of weakening the pillars? A I think that, if the conditions were  
such as to make it necessary to have 100-yard pillars, the size of having cut-throughs every 30 yards  
would be impracticable. I mean that the recommendation you apply to ordinary mining conditions,  
and I stated unique conditions in which 100-yard pillars would be broken upon an ordinary mine.

18088 Q Do you admit that the size of the pillars is governed by the depth of the mine is shown? A Do  
you mean by the cover over the mine?

18089 Q Yes? A Yes, and by the nature of it.

18090 Q And the greater the depth? A Then the larger the pressure.

18091 Q And the larger the pillar must be to resist it? A Yes, I suppose that is a scientific fact.

18092 Q You have had a great deal of experience in drag gas-powder tests? A I have assisted in the  
process all the time I have been working.

18093 Q Have you ever known a fire from a gas-powder shot to light with a naked light? It is a  
dangerous thing in my experience, although I have had a case of my gas was some years  
ago when it actually lit. What it was, or whether it was the actual gas, I do not know. I had had



Witness: G. Henry, 16 February, 1905

a shot in a high room of coal, and it opened up it makes. I then went round to look at it, and I put my light near it, and it went off.

18718 Q. Where did this happen? A. In the Magpie district of Walwood. I think it has happened many times.

18719 Q. Is not Walwood known to be gassy? A. Gas has never been seen there before. That block of coal had been worked many years before and it had been left until the return working came that way.

18720 Q. This was some time ago? A. Yes, but if my memory serves me right I have seen it happen more than once.

18721 Q. Do you think that there was any suspicion of gas being there, and of your not being able to detect it with the ordinary lamp? A. I never met it with the open light, or ever heard of any symptoms of it being there.

18722 Q. And this has only happened since that? A. It has only happened since a shot, but it is not so long ago since there was a fire in the Walwood Colliery just previous to the men working off coal. The deputy went in and found the coal on fire.

18723 Q. Did the men return to the place? A. Of course, the place was full of smoke, but after the shot had done its work all right, as most say. They have a system of detecting of anything coming on so that all the men are out of the mine, and that all the pillars are right. When the deputy arrived at this level he found a fine fire in the mine.

18724 Q. Do you think if it was there might have put his light there upon his return after firing the shot? A. He might, and he might not have noticed it. My own opinion is that the shot hit a small amount of gas.

18725 Q. Do you think it was gas, or do you think it was fumes from the shot which hit the coal? A. I think it may have been a mixture of the two, but, perhaps, there were some of the fumes from the shot there, and there may have been a little gas. I do not know.

Examined by Mr. Stirling:—

18726 Q. You put before the Commission a proposal that cut-thoughs generally should not be more than 30 yards apart? A. Under ordinary conditions I think this is necessary.

18727 Q. You said that conditions were under which it would be necessary to have them a greater length apart, that they would have to be so? A. It would be impossible under the circumstances to have them any other way.

18728 Q. Who do you think should be the determining party to decide whether it is necessary to have cut-thoughs more than 30 yards apart? A. I do not say that cut-thoughs should be more than 30 yards apart, but you would not judge through 120 or 140 yards pillars.

18729 Q. But who should be the determining body to judge of the length of the pillars? A. I do not know of anybody except the Manager of the colliery, he would be the best judge of whether or not the pillars are able to carry the weight.

18730 Q. Do you think that the Inspector might be called on to give a report? A. If the Inspector was called on, I do not see how he could be in good a judge on the matter as the management of the mine. For another thing, I cannot imagine the management leaving pillars of that size unless it was necessary.

18731 Q. What is the practice in your district? Q. The pillars are from 8 to 12 yards.

18732 Q. And the cut-thoughs? A. The cut-thoughs are generally 24 yards. The only exception is the case of the Daisy Colliery, where in one or two sections they have 30 yards. My own experience was that this had a tendency to increase the temperature of the district.

18733 Q. How many pillars are there in the north where the cut-thoughs are of a greater length than 30 yards? A. I said that they were 15 yards, generally speaking. I know of odd cases where they go to 40 yards.

18734 Q. Is there any colliery where this is the custom to have a greater length? A. There is no colliery where it is the general custom to have a greater length than 30 yards.

18735 Q. What is about the thickness of your very numerous pillars? A. Taking the Horrible district, it varies from nothing up to 24 in with 30 feet. At Walwood and the Graham Colliery are exceptions, because they are working under conditions which add several hundred feet more weight.

18736 Q. Do you get 30 feet apart the pillars? A. There is no appearance of any risk.

18737 Mr. Stirling: Q. Can you tell me the size of the pillars at the West Walwood Colliery? A. They are 12 yards, but at an adjoining colliery, under the same strata they are working with 14 yard pillars.

18738 Q. Have they started to take out the pillars? A. They have started to take them out, but I must admit that I am somewhat doubtful of them.

18739 Mr. Stirling: Q. Doubtful of what? A. I am doubtful about the thickness of the roof, and I should not be very sure if they were of them.

18740 Q. Where the Manager of a mine wishes to have cut-though at a larger distance than 30 yards, should he be permitted to have them? A. I do not see who else you can bring in to decide the matter. The Inspector is not there all the time to watch how the pillars carry, and he could only form an opinion by going there occasionally. The Manager is there all the time. The Manager will hardly risk having those large pillars cut he can help, because they lose so much by them.

18741 Mr. Stirling: Q. Who suffers the loss? A. Generally speaking, the miners—of that particular mine.

18742 Q. If a Manager had advice to pursue a system of working with pillars too small for the floor, who would suffer the loss? A. The proprietors.

18743 Mr. Stirling: Q. This then is that the cut-thoughs should not be more than 30 yards apart? A. Under ordinary conditions I think that would be enough.

18744 Q. Supposing a Manager differed with you, and said that he thought the cut-thoughs should be 50 yards apart, what would you do? A. I would oppose it for if that I was a work.

18745 Q. Would he have the power to say that they should be 50 yards apart? A. Mr. Robertson has put an opinion once before us. Under ordinary conditions, the opinion of having cut-thoughs at every 30 yards could be raised out without any trouble so far as I know. I have been in a great number of

mines,



where, and it seems to me that small parties are doing their work all right. The extraordinary proposal of Mr. Robertson would have to be met by another method.

18748. Q. I am putting you a case where, in the opinion of the management it would be necessary to have greater lengths. If the miners were not of the same opinion, who is to be the determining factor? who is absolutely to decide the question? A. If I could imagine a strike of conditions that would compel us to have more than 30-yard pillars then I could understand it. But I am under the impression that it would be an extreme case which would call for the pillars being very thicker.

18749. Mr. Robertson. Q. You must admit that your experience is confined to shallow mines? A. I have said about the way in which they work very deep mines, and I do not know that I have ever heard of, or read of, pillars which are more than 30 yards in length.

18750. Mr. Roberts. Q. If the question should arise, do you not think that the matter might be referred to a commission of representatives of the Management, the miners, and the Inspectors to decide what the height of the pillars should actually be? A. It is always a question as to how a compromise is to be reached. It is a standard matter of mine, and it would be preferable to dispose of the matter in that way.

18751. Q. You would agree to that? A. Yes, but I fancy that the proposal to have out-things of the distance apart submitted by Mr. Robertson would not be necessary except in extraordinary cases.

18752. Q. You make some qualifications as to the matter? A. That was only with reference to the extraordinary conditions that I have mentioned. I cannot imagine a condition of things where the management would have 100-yard pillars except for the purpose of a barrier or something like that.

18753. Mr. Robertson. Q. You told me that he could show some cases where they considered it necessary to have these large pillars? A. I suspect they would be pillars left for some extraordinary purposes, perhaps 60 feet barriers between one section and another.

18754. Mr. Robertson. Q. They are not, they are simply pillars of the ordinary one used in the mine—sometimes they may be 100 x 50 and sometimes 100 yards square? A. Yes.

18755. Mr. Roberts. Q. There was some report which you spoke of as having been submitted by you, where the condition was different. Can you give me particulars as to whether that report showed that the miners were getting more or less than the minimum quantity required by law? A. In one or two of the mines which I have named I have found that they have been working less than the minimum quantity.

18756. Q. In this particular case which you are referring to, where the question of a law was named, do you remember whether the matter was involving the minimum quantity of air required by law? A. I do not think there was the minimum quantity of air there. At any rate we found it inadequate for the ordinary purposes of ventilation. I would not be sure on the matter.

18757. Q. I recognize that the minimum quantity of air may not in your opinion be sufficient, very often. Can you say you are not sure about the matter. How long has been the report was submitted? A. About two months ago.

18758. Q. Do you know whether the report was brought under the notice of the Inspector? A. I do not know. My experience is that the Inspector generally retains my report in any inspection which he subsequently makes.

18759. Q. Where you report as chief inspector that the supply of air is not adequate, do you know whether the method of ventilation is brought under the notice of the Inspector? A. I do not know. I have no means of ascertaining.

18760. Q. You never take any steps to find out whether the Inspector has had his attention drawn to the matter? A. I conclude that the Inspectors have the matter at their own hands. If we draw attention to any danger the Manager is supposed to inform the Inspector about it. A copy of the report is kept at the office, and when he comes to the mine he has to refer to the Manager.

18761. Q. I want to know whether you have ever brought such a matter under the notice of the authorities? A. I have no knowledge whether it is brought under their notice or not. I only once called Mr. Atkinson's attention to a matter by letter, and the answer which I got back made no mention to have anything done to do with Inspectors.

18762. Q. What was that? A. The reply which I got asked me to leave the Inspectors alone. It was at the way I drew attention to a danger at a mine. The man with me, the head Inspector, specially requested me not to put the matter under the report about the mine. I would not have agreed to that, only I knew that it was an old and long-standing danger. He said that he was sure to get the work of it were mentioned in the report.

18763. Q. He was your colleague? A. Yes. And I said that I would write to Mr. Atkinson about the matter myself. So I drew his attention to it. He thanked me for drawing his attention to it, but he said that by my not having given a more report on the matter back I had made myself liable to prosecution, and that he was to take good care not to do again.

18764. Q. How you got that letter? A. I have got it at home.

18765. Q. If you can give that letter can you send it to me? A. I think so.

18766. Q. You might send me both letters, a copy of your letter and Mr. Atkinson's reply? A. I will send them to you when I get back.

18767. Q. Do I understand that the subject of Mr. Atkinson's letter was a complaint of your action in not having reported a danger which you had seen when you were making your inspection? A. He drew my attention to the fact that I had not complied with the Act of Parliament inasmuch as we had not written out and signed a true report of our inspection. I did not lie stress on the danger because I knew it had been a long-standing one in the mine. The mine was in a low position at that time in the colliery, and he knew that they would find some reason or time but if we reported it I had a talk with the Manager about it and reported the condition of affairs to Mr. Atkinson. The reply was, as I have told you, not to do it again, and that I had made myself liable to a penalty. To prove that I was right the mine recently filled the mine up, and it has not worked since—mine had December, I think.

18768. Q. What was the danger? A. It was a large fall in the bed of the creek.

18769. Q. It was not sufficiently secured? A. Yes.

18770. Q. The fall did cause damage? A. The mine has filled up now.

18771. Q. With water? A. It depends on the surface drainage. I do not think the pit has settled since.

18772. Q. What colliery was it? A. South Wallbrook.

35774.



Witness—H. Brown, 4 February, 1870

18712. Q Is there a feeling of this kind amongst the men—thus if they report any danger in a mine they are liable to demand? A Not generally speaking, but there is in two or three mines. In fact one man got sacked as I told you yesterday.

18713. Q Why did you think that you had to mention the matter? A He said that he was able to get the men of the mine to be satisfied in the report.

18715. Q Do you think that such a proposition is of any service if the men go round the mine in a band, and will not report any danger if they do not? A The chief-superintendent was not of much good business and did not see the point of the men.

18716. Q It is no good going round to report all the good things, the object is to discover the faults, if any? A That is right.

18717. Q Can you describe the method by which the delegates, in your district, examine the mine workings? A Under the new special rule they have to make such a proposition.

18718. Q When was that rule adopted? A It was the Minister's proposition, it was not objected to, and it is in use now.

18719. Q How long ago? A I think within the last few weeks. His Address was told you.

18720. Q Do I understand that prior to this new Regulation no examination was made? A Most of them made no examination monthly.

18721. Q How can you tell how the examinations were carried out? A I have gone into the mine with the deputies and the under manager. The examinations were so defective as to be of no use. I have found faults and signs in different parts of the mine, showing that the men must have gone over dangerous ground to work there.

18722. Q You are speaking of what you have discovered in making checks-examinations? A Yes.

18723. Q Did you find this state of affairs prior to the issue of this new Regulation? A Yes. The mines and districts that there was always someone travelling the mines. I found the method of men in strange corners to be.

18724. Q We have had the suggestion made here, that in the north an examination was made in the mine workings? A That does not apply to our case. Take the South Colliery for instance. That is the only place where the men go in bands. There are four more of them, and they take a certain day and make an inspection. It is generally on a Friday, too. They used to choose Sunday for the monthly inspection, and I do not know whether there have been any alterations since. I know that in most of the northern mines the examining deputies travel all the mine workings.

18725. Q When the men put their candles they put down the dust also—do you have noticed the dust? A Yes, and I frequently tell my men that too.

18726. Q I want to ask you about safety lamps. You know that the proposal from the northern miners is to put the power with the frequency of saying whether or not it is necessary to use safety lamps. You disagree with that? A Yes.

18727. Q You say that if this petition introduced in the question danger matters should be referred to arbitration under the Act? A Yes.

18728. You think that the arbitration clause should be made applicable to matters of that kind? A Yes.

18729. Q Is the view of the Inspector for the district stating that it is necessary to use safety-lamps for the safety of the mine, that they should be put on? A Yes, and I think the miners would agree in this a long put in pending arbitration because they never hesitate to discuss a question about the assignment of a mine.

18730. Q But you said that the body of men would require to be moved by some one person, and the names of those who were in such a matter are generally known? A Those are workers' men. I do not know how we can get over that. You know that at the Delegates Meetings you must not publish the names of the miners and secondary of resolutions. The names are never given. The men never discuss their names because of the fear of consequences.

18731. Q It is said that the miners in the north are very close with regard to all that they do? A We have nothing to conceal in the north. We do not mind who knows our business, as a rule.

Mr. MICHAEL GRAY was sworn, and examined, as under—  
Examination by Mr. Loughton—

18732. Q What is your name? A Michael Gray.

18733. Q Are you a member of the Delegates Board of the Colliery Regulators' Federation of the Northern District? A Yes.

18734. Q Are you a mine working there? A I am working at the South Burnwood Colliery, now known as the South Colliery.

18735. Q You have been deputed to come here and give evidence with regard to certain recommendations which it is desired to put in this Commission? A Yes.

18736. Q Take the first recommendation, which is—'Miners, under managers, deputies, and checkers to hold certificates of competency by examination, and to have had five years' practical mining experience before being eligible for their respective positions.' In this your Board require to add—'all the circumstances to be proved in the State of New South Wales.' Do you approve of that? A Yes.

18737. Q Do you know of any cases where that there have been applicants who are incompetent? A Yes.

18738. Q Where? A At the colliery where I am working.

18739. Q When? A Before I went to the colliery.

18740. Q Why was the man incompetent? A Because he had not proved on examining the mine as the examining deputy.

18741. Q In addition to that, in what were he incompetent? A Doubtless in my opinion he was one of the examining deputies. He made the middle examination on the mine.

18742. Q In addition to being a shot fire he was also an examining deputy? A In the second portion of the mine.

18743. Q What else do you say about him? A In my opinion, I did not know sufficient about the gases to be met with in a mine.

18744.



18904. Q. You said that the recommendations of the Northern District is, that of some collieries and the piers in New South Wales, which is the main? A. Better that the men have to serve in the State of New South Wales, than it is only to get that they should pass their examination here. Also, we know of one person that underwent an examination here and failed and he afterwards went to England and got his certificate there, showing that the examiners in England, in my mind, is not so strict as that in the Colonies.

18905. Mr. Justice. Perhaps he need not all the way home.

18906. Mr. Justice. Q. But you are liable of anyone who also went up for an examination and failed and then went up again and passed? A. Yes.

18907. Mr. Justice. Q. Is there anything further you have to say on this matter? A. Another reason why the examination should be held in this City is that if a Manager passed here and went to find a country he would have to pass another examination there before they would allow him to practice. We allow them to fetch a certificate out from England, not to use that certificate without passing another examination.

18908. Q. Recommendation No. 2 is—“Inspectors to be vested with absolute power to order the use of safety lamps.” Your Northern District opposes the recommendation as it stands, but makes the following suggestion:—“That where a defect in the above safety lamps puts into a mine the Inspector and district clerk inspector appear on the spot, the three persons named to be an Ad hoc Committee to settle the question whether safety lamps are to go over the mine or not.” I had Inspector Atkinson has made the suggestion that the matter shall be referred to arbitration, and that pending arbitration the Inspector shall have the power to order the Manager to put the lamps on. Do you agree with any of these recommendations? A. Provided we had a local system, the Ad hoc in Board, I should not see you.

18909. Q. Recommendation No. 3 is—“Prohibition by law of any prohibited and false substituted.” A. I believe prohibition by law in the better system, not according to Paris, it is the cheapest system.

18910. Q. Do you have any suggestions?

18911. Q. Do you know of any case where a mine regulation has been inadequate? A. Yes, what book place indicates in the official way that the law is not adequate.

18912. Q. Where? A. At South Wales. They have a law now going into effect, but in addition they have a law, which shows to me clearly that the former was not sufficient in the first case.

18913. Mr. Justice. It also shows that the law was not sufficient without the former.

18914. Mr. Justice. No.

18915. Mr. Justice. The same rule applies.

18916. Mr. Justice. Perhaps the same goes too large for the former.

18917. Mr. Justice. It is only a small farm.

18918. Mr. Justice. It is a large farm.

18919. Mr. Justice. Q. What is the depth of the mine? A. The South Wales Mine is 620 feet deep, or thereabouts.

18920. Mr. Justice. Q. How many men are employed there? A. About 250 men.

18921. Q. Recommendation No. 4 is—“Water workings to be absolutely sealed off and surrounded by return airways for the free of movement, such return airways not to come in contact with the water.” Your district opposes this recommendation on any as their only as it being impracticable? A. I prefer the way to go through a water working and to go down to the bottom, and not to come in contact with the water. If you break the water workings, my theory is to a sudden outbreak of gas, which would knock the workings down.

18922. Q. If the return airway should pass a water working, the water ought to be sealed off? A. Yes.

18923. Q. Is it good enough practice to allow the water under to pass a water working? A. The water may be sealed off, but you have to have a certain quantity of air going through the water.

18924. Q. Would you have an independent light? A. Yes, an independent light.

18925. Q. Recommendation No. 5 is—“All places except gaspiping areas to have catchlights not more than 40 yards apart.” A. I believe that between the distance and to be 35 yards. The men at that time wanted 50 yards. Since the men, let some catchlight under which lantern has to be put up, not thoughts are 70 or 80 yards apart. Between the catchlight sufficient air to the men, and the men require a better supply of air to go to the face. With lantern the air is not conducted to the face, because a certain portion of it escapes. The quality may be in the lantern, but not in the face of the working.

18926. Q. Do you know of any case where the mine is a quantity of air does not go to the workings? A. Not by actual measurement, but we have some small, and the lantern has brought the lantern further on. A miner has not the opportunity of measuring. He may judge that the quantity of air is not there, but he has no means to test the current work.

18927. Mr. Justice. Q. The lantern has been that the lantern has been too low? A. No, the air has escaped in coming along.

18928. Q. You just stated that when you complained they put the lantern further up? A. It was not because the lantern was not there.

18929. Q. Perhaps there was not sufficient lantern? A. Even when it was clear it did not remedy the end.

18930. Q. I understood that you had sufficient air? A. I never said that we had sufficient air.

18931. Mr. Justice. Q. Would not thought at 35 yards apart, have any effect upon the security of the coal, would they be likely to tend to being so close? A. Certainly not.

18932. Q. I suppose you have a head of some cases in cases in your district? A. Yes, but not because there were not through there.

18933. Q. What was the cause? A. It was on account of the pillars in some instances being only 2 or 3 yards long.

18934. Q. I will not trouble about Recommendation No. 6, which refers to suggestions being made with a locked safety-lamp, and we will come now to Recommendation No. 7, which is—“Monthly examination and report by district and District Inspector with the following:—(a) A lock has been closed by the members of the district.” By the Manager or other manager? A. I think the recommendation is a reasonable one. One of the officials should do it, and it does not matter who so long as it is done.



19396. Q. Have you ever used the hydrogen lamp? A. No.  
 19397. Q. Has it ever failed? A. No, but I have by testing that it is the best lamp to detect gas with, and I was in the air of it.  
 19398. Q. You only suggest it in case where the ordinary safety lamp will not detect gas? A. Certainly. It is not required of the other lamp will not detect gas.  
 19399. Q. Recommendation No. 10 is—“A current of 200 cubic feet of air per minute to be provided for every horse instead of 160 feet as at present.” To which the Northern District desires to add—“Not less than 200 cubic feet of air per minute for each man and boy.” A. I am in favour of that. A workman cannot have too much air. Turkey states that it is necessary that each man and boy should have 180 cubic feet of air, and that a horse should have five times as much, which would make it 720 feet of air for the horse.  
 19400. Q. Do you know any mines where the supply of air is inadequate, and yet the supplies are over the maximum amount required by law? A. Yes.  
 19401. Q. Where? A. At Lambton Colliery, at the South Worsath Colliery, and in a portion of the Dudley Colliery.  
 19402. Q. Has there been complaint that the supply was inadequate? A. Yes, at South Worsath, and there is complaint at a few Lambton collieries.  
 19403. Q. What was the complaint? A. That they would try to remedy it. At South Worsath they do it as much as they can.  
 19404. Q. In such cases where they supplying the minimum amount of air? A. As far as my opinion goes, they were.  
 19405. Q. Recommendation No. 10 and 10 (b) taken together, are—“All doors erected so as to close and remain closed at the two extremities. Suitable doors are doors between main entries and returns, and main headings.” Can you tell me whether you know of any disaster resulting from a single door having been closed? A. Yes.  
 19406. Q. What is the name of the colliery where the disaster resulted? A. It was the Burnwood Colliery. It was a single passage being sealed of a door, according to the evidence given, and the disaster in the mine.  
 19407. Q. Recommendation No. 10 (c)—“Weekly arrangement of men in each system, and report thereof sent to Inspector.” To which the Northern District proposes to be added—“Instead of monthly, as at present.” A. I am in favour of that. I would have suggestions as often as possible, because from one month to another circumstances may change.  
 19408. Q. How would you have the arrangements to be made? A. As near the face as possible.  
 19409. Q. Where are the arrangements to be made—on the face or in the road? A. In the road headings, and in so far as possible the places are 20 to 50 yards from the working face.  
 19410. Q. Is the amount of air there any indication of the amount of air going to the face? A. No.  
 19411. Q. Recommendation No. 12 is—“Every supply of safety lamps and their regulators equal to one-third of the number of persons employed below ground to be kept constantly in good order, and ready to use.” Mr. Galt has suggested that there should be a good number of safety lamps in all roads, and twenty lamps for every 100 men employed at a given time. Will that meet your idea as to the surplus quantity of lamps which ought to be kept? A. I think it is a good suggestion, and quite in the right.  
 19412. Q. The Chief Inspector has suggested that there should be a fifth entry in runs where the right light is used, and is a fourth entry where the safety lamp is used, that would be equal to one-fifth or one-third of the number of persons employed below ground. Would that be an adequate supply? A. He has not given my own view.  
 19413. Q. No? A. I do not think it would be such a good suggestion as the other.  
 19414. Mr. Robertson. Q. With reference to the Chief? A. The suggestion by Mr. Bosser.  
 19415. Mr. Bosser. Q. Recommendation No. 14 is—“Travelling and baggage roads, and other places necessary, to be properly watered.” To which the Northern District desires to add—“All travelling roads, and have a road to be kept free of water.” A. I think that all the roads should be watered—both the road, the water, and the travelling road watered. In some cases it is done now.  
 19416. Q. Was it done before the Kewdale disaster? A. At some times it was, but it was not done at all the places. At South Worsath it was not done, but at Dudley it was.  
 19417. Q. Did they use sprays? A. They had water laid on and a short length of hose.  
 19418. Q. They would be the travelling roads having tracks 5 feet high, do you know whether there is any provision to clear dust off? A. I know of one mine a mile or so from, but at other places it is not done.  
 19419. Q. Would you be liable on that mine to let you speak of it? A. It was done 4 to 6 to 7 ft. But in other mines, where the right is only 5 ft., nothing is brushed down. The roads stop at that.  
 19420. Q. Is your opinion, the roads should be brushed? A. They should be where a man has to carry a heavy load and travel 2½ miles—this ought to be brushed. A man has to carry 4 lb. of powder, 6 lb. of coal, and his machine, and to walk that distance is a very serious task.  
 19421. Q. Will it avoid the trouble if the roads are 5 feet high? A. Yes.  
 19422. Q. Recommendation No. 14 is—“Manager should be empowered to give more personal care and attention to the great portion of the colliery.” Can you say anything about that matter? A. Yes, I have known the Manager to be very help a work. I have known them not to go down the pit for a fortnight.  
 19423. Q. In your opinion, how often should a Manager visit the underground workings? A. He should visit each portion of the mine once a week.  
 19424. Q. I tell you of Recommendation No. 15 and come to No. 16, which recommends that the use of the machine be stopped. The Newcastle Helston Road desired to add in this recommendation that the machine be “Not less than 5 feet high and 4 feet wide, and to be watered.” Do you know anything about the machine of machines coming away? A. Yes, in the Lambton Colliery, because they were too narrow, and there was no objection to that. There were particularly wanted where the men have to travel where the steps are going, and the machines ought to be only 3 feet wide, so that the steps would run into them.  
 19425. Q. You want these deep but narrow? A. Yes.  
 19426. Mr. Robertson. Q. Do you say that a man was injured because the machines were insufficient? A. There was an objection at the mine.



19865 Q The obstruction might not be here here there? A It was not a vehicle at all of three men on obstruction there and a man could not get into it.

19866 Q If there was an obstruction there it would make no difference if the vehicle was 10 feet away? A That was the case. It would be an effort, but from space obstructions not.

19867 Q You are going to give an estimate of someone being injured, and you give an estimate which, upon being investigated, proves not that the vehicle was at (unclear) man, but that the accident happened because there was an obstruction in front of one of them —

19868 Mr. Avery Q Did the witness say that to you then?

19869 Mr. Anderson I take it that he knows about the case.

19870 Mr. Anderson Q I suppose the case is common, perhaps? A Yes.

19871 Mr. Anderson Q You know of no case where a man has been injured? A No.

19872 Q You know of no case where a man has been injured coming to the mainline end of the machine? A No, I cannot say that I do, only that case.

19873 Q Have you in your mind the case where the bridge road is also used as the travelling way?

A Where there is an incline and also where it is used by the regular bus and passenger purposes.

19874 Q Does it apply to cases where the engine type is used, where the speed is very slow? A There should be proper machine there, because if the speed is very slow up an incline there is very good danger.

19875 Q There is a difference between ships travelling at the rate of 2 or 3 miles an hour and ships travelling at the rate of 10 miles an hour, because one records the running pace of a ship and the other does not come up to the sailing pace? Q I can refer to a colony where the ships break away and I could not run fast enough, because I live.

19876 Q I do not suppose you could in the case of a horse? A An tug as they keep the side it does not make much difference because there is very little danger with an engine type.

19877 Q You can say the danger between the speed of 1 or 2 miles an hour and 10 miles an hour?

A But it is an accident should happen in connection with an engine type, not system but one dangerous as another. I know a horse ship broke into a going down a steep place, where they landed against some other ships and broke three ships too, and put them all over the coast.

19878 Mr. Knight Q They did not put you in the machine? A No, I was behind the ship when they broke away.

19879 Q You want these machines to be white-washed — do you think they would require white-washing very often? A No, one white-washed a long time and another.

19880 Q I will give you Recommendation No. 17, and you to No. 18 — "Recommendation to employees regarding the use of engines." To which the Northern District requires to be added "That proper machinery be kept at the second shaft out of 10 to 15 ft in the distance within one hour." What have you to say to that Recommendation — is that any kind of a rule for the men concerned? A They would be instructed by the Manager or the deputies.

19881 Q How often should they be instructed? A It all depends how the men are working. If they are not new workers it would not be so often as with new arrivals.

19882 Q Does every man? A I think that would do.

19883 Q There has been a suggestion that the turn in the road should be white-washed, with an arrow pointing in the direction of the outlet —

19884 Mr. Knight That was an alternative suggestion.

19885 Mr. Knight Q I am asking it now in the general recommendations? A The men would know what was to be done if there were an accident in the road.

19886 Q Regarding the second part of the recommendations, that new workers should be kept at the second shaft work? A I think that is nothing but right and proper, and the Act provides for it men to new workers.

19887 Q What experience have you had with regard to delay in getting to the surface? A I have known three instances where men have been delayed longer than a reasonable time in the mine through defects in the hoisting.

19888 Q Recommendation No. 19 — "That Mines Act to forbid a black list of employees being kept and punishing employer prevention of discharged persons obtaining employment." Can you say anything in support of that recommendation? A As far as the district is concerned, I am not concerned, there is not any proof that there is a black list, but many men are of opinion that there is a black list. There have been no actual proof, because they would have to go to the Manager to get it, and they cannot get any proof from the Manager. I can give you a case of great suspicion that only happened, within the last month, that causes men to think that there is something.

19889 Q Yes? A Two men were sent to a Manager to ask for employment, and the Manager seems minded then to go to another Manager. Last month Manager gave them a start, and they actually started, but at the following day the Manager told them they were new men and that they could not start there and then he told them to go to another Manager. Then they asked for work at the other colliery the Manager said, "Oh, I am not the Manager, you had better see my brother." Then we after having been told that they could work at that colliery, it was thought that there was a black book against them and that that was the reason why they could not get work.

19890 Q Had they taken any previous part in it down a mine? A I cannot say that. But I can give you another instance. I had occasion to go to the Helms County to give evidence against a company. Since that time they have never got work. I looked there the reason why, but they would not tell me, but I am only concerned at the time with my interest in that company.

19891 Q You think that a previous idea that they have in America was that they would effect? A I should certainly say that a previous idea that you have said is not from the Mining Act of last year, upon page 271 of that would be of great service.

19892 Q Would it be any kind of a very hard unproven difficulty in employment, or would it be in fact that they could do so with some security? A Certainly it would give men more liberty in respect to part of any case which they could meet with.

19893 Q Do you know as a fact that men are afraid to report dangers which they observe for fear of dismissal? A Well, I would not like to say.

19894 Q Is there anything else you can say on this point? A No.

19895 Q Recommendation No. 20 — "That safety lamps not to be looked for shoddy." A That provision is carried out at our colliery. I know that the provision is dangerous too.



Witness—22 Ques, 19 February 1937

19089. Q. I now come to the recommendations which has been specifically framed by the Delegates Board of the Northern District, in No. 21, and it is as follows:—That the miners of this district have the power to recommend for appointment as Inspector for the appropriate districts? A. We are of opinion, among the various things which depend upon the Inspector, we should have a right to recommend the appointment of that Inspector. We have previously in such other cases, and the salary of our men depends upon a previous man being appointed.

19090. Q. Do you know of any person who, in your opinion, was not a prudent man who has been appointed? A. No, I do not.

19091. Q. I take it that this suggestion implies an addition to recommending the appointment, that the appointment should be confirmed in the instance of some valid reason against it? A. Unless there is some valid reason that the Inspector we recommended should not be appointed, no comment that brought to be appointed. We consider that we ought to have the right in the interests of the mining community.

19092. Q. Recommendation No. 22 is—That a red light be carried on the front of trucks or set on engine drivers, or other self-moving vehicles? A. I am in favour of that, and it is wanted to decide danger to travelling parties, so that if ships are coming they can get out of the road.

19093. Q. Recommendation No. 23 is—That a clause be inserted in the Act whereby better sanitary arrangements should be adopted in all cases where workers are employed? A. I am in favour of that. The sanitary arrangements above ground are very good, but underground, where 300 or 500 men are employed, there are arrangements at all and matters are extremely satisfactory.

19094. Q. Do you suggest any remedy? A. In some instances they have certain places which the men can use for the purpose, and the matter is brought out of the mine.

19095. Q. With regard to Recommendation No. 24—that is our opinion the management of a mine should not interfere with the right of an employee to go out of the mine when he desires? A. The President has ruled that this does not come within the scope of this inquiry, but are there any other matters which you desire to mention? A. No.

JOHN PATTERSON was sworn, and examined, as under:—  
Examination conducted by Mr. Lynght:—

19096. Q. What is your name? A. John Patterson.

19097. Q. What are you? A. A miner, working at the Western Colliery.

19098. Q. Are you a member of the Delegates Board of the Colliery Employees Federation of the Northern District? A. Yes.

19099. Q. You have considered these recommendations, and are prepared to give evidence upon them? A. Yes.

19100. Q. With regard to Recommendation No. 1—That Managers, under managers, deputies and shot-fires should hold certificates of competency by examination, and have five years' practical mining experience before being eligible for their respective positions. To this the Newcastle District desires to add:—And all certificates to be in the State of New South Wales? Can you say anything in support of that? A. In support of that statement, I would say that the safety of the men, and also the safety of the mine as a whole, is largely dependent upon the Manager, and it is therefore necessary to have certificated men in charge. I have all this time known in connection with examinations that our men both the Colliery and West House and general fresh ones will have after he had failed here.

19101. My friend (David) Q. A first-class certificate as Manager? A. Yes.

19102. My friend (David) Q. Have you any doubts of the fact that a man who is not able to give evidence knowledge here, has right to take to claim that experience in the British coal-fields, and you are not recommending these? A. It may appear that way, but why should we have any connection with the British coal-fields, and why should a certificate granted in England have anything to do with the coal-fields here.

19103. Q. Have you had any experience in the British coal-fields? A. I have worked a good many years there.

19104. Q. There are a good many systems of working coal there, and a good many defects which we do not meet with here, and therefore, men studying them, or following their professions in the British coal-fields, will be better qualified than if they are confined to a state of the coal-fields in the Colliery.

A. The fact is my mind is—he could not pass an examination here if he could not do it in any other place.

19105. Q. Because probably he could not give sufficient experience here? A. He may have gone there to give experience. It may happen in that way.

19106. My friend (David) Q. Do you wish to say anything further in support of this recommendation? A. No, nothing further than I have already said—Summarily the safety of the men and of the mine depends upon the Manager, a certificated man ought to be in charge of the mine.

19107. Q. Do you know of any cases where, in your opinion, deputies or shot-fires have been appointed who are incompetent? A. I am prepared to say it is a very difficult matter to say. So far as I am aware, I am not in a position to say whether men are incompetent or not. If you mean that a competent man must hold a certificate, then I do know of men who are incompetent or dangerous who do not hold a certificate.

19108. Q. Apart from the holding a certificate, do you know of men who are incompetent, through lack of experience or otherwise? A. No.

19109. Q. Recommendation No. 25 is—Inspectors be vested with absolute power to order the use of safety-lamps? This is opposed by your Northern District as it stands, but it is suggested, "That where a doubt exists about safety-lamps going into a mine, then the Inspector and either a competent Appointed a third party, the three parties should be an Arbitration Committee to settle the question whether safety-lamps are to go into the mine or not." The Chief Inspector has suggested that the matter should be referred to arbitrators, and that, pending arbitration, the Inspector should have power to order the Manager to put safety-lamps into the mine—would that meet with your approval? A. Yes.

19110. Q. Recommendation No. 26—Ventilation by furnace prohibited and fans substituted? A. Yes, I believe in that.

19111. Q. Do you know of any place where a furnace has proved inadequate to ventilate a mine? A. No, I do not know of any case personally.

19112.



18913 Q You have your attention taken on general knowledge? A Yes.

18914 Q Recommendation No. 8—“Where workings are so absolutely solid all well supported by stable strata, for fear of an event, all workings should not be closed in contact with mine.” That Board appears that way in this case to be very impractical—but do you suggest? A I suggest that those workings in this case should be closed by a supply of their own, so that no connection would be carried away to any other part of the mine. The split ought to be quite separate, and have no contact on with the outside current.

18915 Q In case of the mine away passing a gas, would you have that side of the gas sealed off? A Certainly.

18916 Q Recommendation No. 9—“All pits or except grappelling down to have cut-throughs not more than 10 cubic feet.” A Yes, I am in favour of that.

18917 Q It has now suggested that cut-throughs at distances of 20 yards apart not be worked the road and roadway to connect? A Where I am talking there are 15 yards cut through, and there is not a stick of timber in the mine, and there is a chain of a couple there.

18918 Q What is the depth of the strata over the mine? A Between 500 and 600 feet.

18919 Q Do you think that cut-throughs would have the effect of bringing on an escape? A None, as they open.

18920 Q Do you find in law finding if on the absence of cut-throughs long lengths of heaving are used, that the ventilation is affected? A I believe so, for the simple reason that further cannot be put up on so to make the air go straight to that particular part of the mine where it is wanted. We ought to have the current on the line where it is wanted to go, but, owing to defects in the heaving, it is difficult to get it there.

18921 Q In practice it has been found to lead to different ventilation? A Yes.

18922 Q I now read Recommendation No. 6, and some of Recommendation No. 7, which is—“Monthly measurement and report by dipper and District Inspector with the hydraulic down.” Is which I am adding the words “by the Manager or under manager?” Do you approve of that? A I do.

18923 Q Do you think that the hydraulic lamp shall be used only in cases where the safety lamp has been unable to detect gas? A Yes.

18924 Q Recommendation No. 5—“A minimum of 50 cubic feet of air per minute to be provided for every horse, running of 100 as at present.” Is which the Northern District Board desires to add, “Not less than 100 cubic feet of air per minute for each man and horse.” Is provision, have you found the minimum provided by the present Act sufficient? A So far as my opinion goes, it is sufficient.

18925 Q Recommendation No. 6 and 10 are passed over. Recommendation No. 11—“Weekly measurement of air in each roadway, and report thereon to work in inspection.” Is which your Board desires to add, “instead of monthly, as at present.” Now, where should the measurement be taken? A At the working face.

18926 Q Supposing the manometer will not record at the working face, what would you say? A I should say that the men were not getting sufficient air.

18927 Q I understood that the manometer used to test the air will not record at the face,—do you want the manometer there as near to the face as the manometer will take it? A Yes.

18928 Q Is taking the air at the split any indication of the air that is circulating at the working face? A No.

18929 Q Recommendation No. 12 is—“An equal supply of safety-lamps and their regulation equal to one-third of the number of persons employed below ground, to be kept constantly in order and ready for use.” Mr. Bowdler suggested that there should be a minimum of twelve lamps kept at each mine, and that an additional twenty lamps should be kept for each 100 men employed below ground. Does that mean with regard to being a monthly provision? A Yes.

18930 Q Recommendation No. 13—“Traveling and bridle roads and other places necessary to be properly watered.” Is which the Northern District Board desires to add, “All traveling roads, and bridle roads to be 4 feet high.” An engine watering, what do you say? A I am that wherever watering is required it should take place 10 times—the mile and the road and not on the 5 or 6 miles.

18931 Q How is the position in your colliery in which the water and the road? A No.

18932 Q Was it the practice before the Kilmalea disaster to water the traveling road in your colliery? A Not generally.

18933 Q With regard to the traveling road being 4 feet high, what have you to say? A I say that that is a matter which I look upon as being a necessity. Where I am working now, having the strata on the engine place, it will not average over 4 feet in height, and a new traveling road that road, carrying back to work with and to the road itself, five or six inches in height to get to work. In fact, men are almost crushed out when they get to their work. That is the reason why men should have a proper road to walk along.

18934 Q In addition, would it not also want the ventilation if the mine were 4 feet high? A Yes.

18935 Q Recommendation No. 14 is—“Managers should be compelled to give more personal time and attention to the management of the colliery.” What is your experience, do you have the attention given by the Manager to your colliery? A I am sure that it is very seldom I see the Manager down at the colliery when I am working at present. I believe that the Manager ought to visit the mine often, and in so doing he would see many things that would be of advantage to him as Manager, and also to the Company. Many little matters also would be brought to light in personal observation, and there will be less losses in connection with the working of the mine than at the time.

18936 Q How often do you think the Manager ought to go on the mine to make inspection? A Two or three times a week.

18937 Q What has been your experience? A Oh, I only see him two or three times a year.

18938 Q What is the name of this colliery? A The Kilmalea Colliery.

18939 Q Recommendation No. 15 is—“Sides of workings to be 4 feet high.” A With regard to this matter I think that on engine places where there are running it is necessary that there should be greater protection taken to prevent accidents. The present workings are not far enough back nor set high enough. I would have them 4 feet high, 4 feet deep, and 3 feet wide. They should not be too wide, or else it would allow the slips to get into them.



20000.—J. February 12 February 1905.

19996. Q The Northern District recommends that they should also be whitewashed. How often would it be required that this whitewash should be renewed? A I do not know, but if it was required once a week I would agree it.

19997. Q Recommendation No 18 is—"Instruction to employees regarding the usage of escape." The Northern District Board has added the following: "That proper machinery be kept at the mouth of the shaft with sufficient air to enable the men to escape within an hour." In what way would you have the employees instructed in the matter of escape? A In the event of any disturbance of the ventilation, or any other emergency taking place, we were accustomed to that the men will always reach back the way which they have been used to walk. It might be that if the men were instructed in the different routes that they would be able to break through any trouble which occurred and escape, and in that way life would be saved in many instances.

19998. Q Who would now have to give these the instruction? A I think men who go through thoroughly into the matter.

19999. Q Who do you say the deputies? A Yes.

20000. Q How often should you have them instructed? A Once a month.

20001. Q In addition to instruction by deputies, do you think that it would be well to have the outlets covered with wire-net, so that the men would be able to distinguish the road out? A Yes, even marks following the way out. I say that we have approached our Managers in connection with that very matter.

20002. Q What answer did he give you? A He said that he would treat the matter over, and see if he could approve of it.

20003. Q With regard to the recommendation of machinery? A With regard to the recommendation that machinery should be kept at the second shaft for the purpose of helping employees out of the mine, there have been some orders for some where men have been kept in the main shaft for a couple of hours waiting to be taken up. If there was machinery which would lift them up in an hour, the men would be out of the mine an hour sooner, and that, in the case of a serious explosion, would mean that we should have a better chance of our lives.

19991. Q Recommendation No 19 is—"The Coal-mine Act to forbid a Match-out of employees being kept, and providing the proper prevention of discharged youths obtaining employment." Do you know of any instance of a Match-out in your district? A Well, it is a pocket thing, but there is something equal to it, well it is what you like.

19992. Q What is the effect of it? A Not wanted.

19993. Q You know that something got out once from getting employment if they are objectionable to the proprietors? A Yes.

19994. Q Do you think that if it were provided that the recommendation should be compelled to state in writing the reasons for discharging a man, that would tend partly to get over the evil? A I believe it would if they would be honest.

20004. Q Do you know of any cases where persons have been discharged in your district? A Yes, I know of cases where it is better of persons have been discharged. You may ask it when you like. The difficulty is to get at the bottom of the matter. I have on the occasion of one strike there was a little bit of trouble, and when the matter ended and the men went through the office, the word was passed, pass on, and no one knew until the next day what the word meant whether they were on or out. I was working with a mate—he got on and I did not. I went to the Managers and asked him why I was not put on, and told him I was a good worker and had always done my work properly, but he never told me why it was. He declined to give a reason—he shied at it.

20005. Q Do you think that a provision in the law requiring the management to state in writing the reasons for discharging a man would be efficient? A Yes.

20006. Q If such a provision were to force you think it would give men more courage to report what they are in danger? A Yes.

19995. Q You know that there is a fear of reporting here, because of a fear of offence amongst the? A Yes.

20007. Q That fear does exist? A Yes.

19996. Q Now, I will take the new suggestions. The Northern miners have suggested that the reasons should again be given to the proprietors the appointment of Inspectors for their respective districts? A That is a good recommendation, and should meet the views of both the Managers and the men in this district.

19997. Q The recommendation makes that in the absence of any valid reason the reasons tendered should be confirmed? A Yes.

19998. Q I suppose you agree with recommendation No 22—that red lights ought to be carried on the back of miners? A Yes, I agree of that.

19999. Q And Recommendation No 23 recommends that better sanitary arrangements should be made in connection with mines? A I can certainly say that better sanitary arrangements are very badly needed.

20000. Mr. Hume. I think that this latter sanitary matter within the scope of the Commission, and I think it is a matter which certainly requires attention. Now, Sir, will you allow me to say a very horrible state as regards sanitary arrangements, and as an instance of that we have the year outbreak at Lydney near Abertillery.

20001. Mr. Gaskell. Q I may say that with regard to Recommendation No 24 that the management should not interfere in the right of an employee to have the mine. The Commission is of opinion that there is a matter which does not come before them.

20002. Mr. Hume. Sir, I beg to say that the papers in connection with the strike in the Hamilton Mine, and the papers were read of Enfield No 24.

[The Commission at 11 o'clock adjourned until 11 o'clock on the following Monday.]



## MONDAY, 23 FEBRUARY, 1904.

[The Commission met at the Treasury, Managere's street, Sydney.]

Present:—

C. B. F. MURRAY, Esq., D.C.J. (PRESIDENT)

D. A. W. BENTHURSTON, Esq., COMMISSIONER. | D. DITCHIE, Esq., CLERK (1904).

Mr. Bruce Smith, Barrister-at-Law, instructed by Mr. Wood, Crown Solicitor-General, appeared on behalf of the Crown.

Mr. A. A. Arkison, Chief Inspector of Coal mines, assisted the Crown's solicitor.

Mr. C. G. Wade, Barrister-at-Law, instructed by Mr. G. J. Barry, appeared on behalf of the Mount Kembla Coal and Oil Company (Proprietors of the Mount Kembla Mine).

(Mr. J. Gaffin, Secretary to the Commission, was present to take shorthand notes of the evidence and proceedings.)

Mr. A. R. O. REELER was sworn, and examined, as under:—  
Examination directed by Mr. Wade:—

19070 Q What is your full name? A Alfred Robert Oswald Reeler.

19071 Q What are you at present? A Manager, New South Wales Coalfields.

19072 Q How long have you been there? A Since the beginning of this year.

19073 Q Have you been Manager elsewhere besides New South Wales? A Yes, at Corraland, for four years, but not now.

19074 Q Do you know anything about the Managere's Mine? A Yes; I was there also for eight years and a half, I think.

19075 Q What position did you occupy there? A Managere's (or general) assistant to Mr. Robertson.

19076 Q How many years' experience have you had of coal-mining altogether? A Fifteen years connected with mines for under thirteen years, I think.

19077 Q How long have you known Mount Kembla Mine? A I saw Mount Kembla, first of all, in 1899, but I have been there three times since then.

19078 Q From what you know of Mount Kembla, was there anything that would lead you to say it was a gassy mine—I am speaking now of the time anterior to the 23rd of July, 1902? A No, my impression about Mount Kembla was that it was not a gassy mine.

19079 Q And, as to its being a dusty mine or not, could you say anything about that? A I could not say it was a dusty mine, because Mount Kembla is one of the richest mines in the district. It had a fair amount of water, and they had a lot of drainage schemes there to get rid of the surface water, and those facts, and the number of pumps they had working, in regard to getting rid of the surface water, had nothing to do with the mine. I had only been at Mount Kembla once before the explosion; that was in the beginning of 1900, and that was a good mine in the sense that it was not a dusty mine, you could not call it a dusty mine when I saw it then.

19080 Q You said just now you had been to Mount Kembla several times? A Yes.

19081 Q Do you mean you had only been inside the mine once? A Only once inside the mine since.

19082 Q But you had been to the mine? A I had been to the mine several times.

19083 Q You have had an opportunity of seeing the general equipment and working of the mine? A Yes, the day I went there I went to look into that matter particularly, with the idea of adopting at Corraland some of the systems in operation there.

19084 Q What do you say of the equipment? A Speaking generally, I was very well satisfied with what I saw there on that visit.

19085 Q When did you first go inside the mine after the disaster? A We went straight there from the Arbitration Court.

19086 Q By "we" you mean a lot of Colliery Managere? A Yes, a lot of us went together, and we went fairly quickly as quickly as we could go, and got to within quite a distance of the mine.

19087 Q You were more or less engaged in the work of rescuing? A Yes, we went on explosives work first of all.

19088 Q What parts of the mine were you in on that first night—Thursday night? A The late Mr. Kuter and I, two of all, went into the left-hand travelling road in the main shaft, so where the bridge was.

19089 Q To the junction of the No. 1 shaft? A And the travelling road. We went down that left, and went along there so far as the junction of No. 1 heading road with the main straight heading road. Then we came back and got on the other side of the dip, where this bridge was, as in the travelling road leading to the No. 1 district, and we went down and came across Mr. Robertson who had Inspector Bates and Mr. Stokes, but before we got to Mr. Robertson we saw a man whom I have heard of since to have been named Smith, and we went on and came across Mr. Robertson, who told Mr. Bates and the under-managers, Mr. Johnson, and Mr. Ditchie were with him, I think.

19090 Q I do not want the details. That was so the early part of the afternoon, before dark? A That was before dark.

19091 Q I only want to know generally what sections of the mine you went in? A Then we came out, and went out with Bates a certain distance. I had telephoned for the doctors from Corraland, and I went out and got these doctors, and went on with Katey again. We went down that travelling road and got on to the engine road somewhere near the 4th shaft, and we went on as far as the 10th level. I did not feel too well then, and came back and went out that travelling road that leads to Patrick's Drift, and had



- 1810 I read with them. I once went to see what they call the cross-walk sign read, back down the 4th Right, and then that gate opened out again down the travelling road way.
- 1899 Q No. 1 travelling road? A Yes, sir.
- 1900 Q Did anything strike you as remarkable at that stage? A In what way do you mean?
- 1901 Q As to appearance? A The more was fairly even, but the air was not very hot. We could get many facts well. The worst part of the air was down on the staging road, somewhere opposite the 4th Right. The 4th Right was very hot. We went up there. Some of the people who were with us wanted us to go up to look for the box. I came to the conclusion that if we went up there we could not get back, so we did not proceed.
- 1902 Q How far did you go up the 4th Right? A We were in the travelling road then, and we went up for 2 miles down it, and it was too strong then.
- 1903 Q Two or 3 miles up the 4th Right from the No. 1 main travelling road? A Yes.
- 1904 Q What was the best like there? A It was very agreeable, but your eyes were that sort of thing. I imagined them from that place and got on to the digger road, where there was more air. It was hot, you know. The whole was in a state of—the nature, and that sort of thing about, made the best very agreeable.
- 1905 Q Do you remember any of the men you helped to bring out, or found? A That night we were across one more who was sitting on the travelling road some good distance inside, I do not know the distance exactly.
- 1906 Q What travelling road? A The No. 1 travelling road. He was sitting there, he was dead. We were some time at to somebody else had been here, I think. His name, I understood, was Powell. I heard that afterward.
- 1907 Q That would be in the travelling road somewhere near the 4th Right? A That would be the position. I suppose, about that position. Somewhere about there. I did not see any more before that night.
- 1908 Q What would that be? A I forget the name now, whether it was Powell or Powell's first, but it was one that had some of Powell's first. (For the first.)
- 1909 Q Would that be Powell or Powell's first? A I do not know. I am confused in those two names.
- 1910 Q He was sitting down, you say? A Yes, alongside two others, just clear of the road-setting down quite naturally.
- 1911 Q Did you have any words about him? A Yes, there was a talk on him.
- 1912 Q What was that? A A story of some of the friends of a man, and his face was all black, he was very black. The lower part of his body were exposed, and he was quite black and covered dimly with coals.
- 1913 Q Was he wearing a shirt or a shirt? A I forget, his arms were bare. I know there were some parts of his arms exposed, his face was all black also.
- 1914 Q Was the skin on the most, where the abdomen was, detached? A No, it was like if it was pulled off there and you could see a quite red underneath.
- 1915 Q Did you see any other detached anywhere else on his body? A No.
- 1916 Q Did you notice his hair? A I did not notice it very particularly.
- 1917 Q Did you see anything about his hair to indicate that he had been burnt or singed? A I could not say, I never saw of that. He was sitting on a board two more men also had probably no marks on their bodies. They were sitting on a day, they were not peppered. Their faces were clean compared with Powell's.
- 1918 Q You subsequently made an inspection of the mine—was it on the 4th of August? A On the Monday we went round to ascertain the cause of the disaster.
- 1919 Q Mr. Peter Smith? Q What date was that? A The 4th, probably. I forget the date.
- 1920 Q Mr. Peter Smith? Q You were with Mr. Jones and Dr. Robinson? A Mr. Jones, Dr. Robinson, Mr. Cook and I think Mr. Rogers, I am not quite sure.
- 1921 Q Arrived? A Yes, Saturday day.
- 1922 Q Did you make any examination for fire-damp that day? A We did.
- 1923 Q Do you remember where? A We went to the face to Tom and Powell's headings. There was a doubt about what was discovered there, some could get nothing, but my impression was that there was a trace of gas of some sort there.
- 1924 Q Mr. Robinson? Q What lamp were you using? A I had an ordinary Anderson's Hallowell lamp.
- 1925 Q That is the only safety lamp you were testing with? A Yes. It made no examination on the 4th's general head also, No. 72 Place, and with the ordinary lamp we could discover nothing, but Mr. McGowan had told some of the party that on the Saturday night he had found 1 per cent in 1 per cent there with the Hallowell lamp.
- 1926 Q Saturday night would be the 2nd of August? A Yes.
- 1927 Q Did you get anything that day? A We got nothing.
- 1928 Q Did you examine any place else for gas? A We went to Gill's general head—No. 23, 44, 45, and 46 pillars—and we were stopped by an old fall in Gill's head, opposite the first cut-through. Mr. J. C. Jones was together tested and he could get nothing with the ordinary safety lamp.
- 1929 Q The 1st man that you tried something else? A No, we had not the hydrogen lamp with us. My colleague was exhausted.
- 1930 Q Did you try chlorine for gas that day? A At the 2nd headings, I think the Inspector examined there.
- 1931 Q The No. 1 main headings? A The 2nd headings.
- 1932 Q The face of No. 1? A They reported that there was gas at the top of the first cut-through.
- 1933 Q Mr. Peter Smith? Q When do you mean? A My McGowan told us that the Inspector's party had discovered gas.



18025 Q Would you mind naming the inspectors? A Mr. Atkinson and Mr. Hamble. There were two parties. We met them at that point, and they told us about it.

18026 Mr. Atkinson: The inspectors told you? A Yes.

18027 Q But you said that Mr. McElroy had told you? A No, it was the Inspector's party we met, and McElroy told us. I have got a note here from McElroy's wife.

18028 Mr. Wade: Q And you got up there? A Yes.

18029 Q How you knew and made a further examination, to ascertain the cause of this disaster? A I have been there twice now.

18030 Q What was the date? A One date was 19th or 22nd September, but I forget what the other one was. I have a note of it here (reads or refers to a note-book)—20th of August.

18031 Q You have been all over the mine, have you not? A I have been all over the mine to the north of a straight line containing the shaft with the tunnel north, but I have not been on that part of the mine south of the shaft.

18032 Q That is where the long wall workings are? A I have not been there.

18033 Q Speaking generally, do not start to go into the details at the present time—in all directions were the indications of force between the 4th Right and the 5th Right? A Immediately below the position of the 5th Right with the main capric road there is a piece of broken gear.

18034 Q I do not want to go into details now. Speaking generally, what do you say the indications of force were between the 4th Right and the 5th Right? A Nothing.

18035 Mr. Wade: Your Honor, I have a plan here which I cannot formally prove at the present time, but I am going to prove it by and by. It has been prepared on the same basis as the departmental plan was, but sticks to the whole of the face of the No. 1 Right with the departmental plan does not. If Your Honor will allow me to give evidence about that now, I will prove it afterwards.

18036 Mr. Wade: By whom was the plan made?

18037 Mr. Wade: By Mr. Warburton.

18038 Mr. Wade: When?

18039 Mr. Wade: About the same time as the Government officials were making the other plans. I am going to call Mr. Warburton.

18040 Mr. Wade: May I say there was objection, I understand, to that plan being used?

18041 Mr. Wade: Yes.

18042 Mr. Wade: Mr. Roberts can verify the information on that plan from his own observation. Perhaps I might under-stand your Honor?

18043 Mr. Wade: They were submitted, subject to Mr. Warburton's being called.

18044 [A plan of the No. 1 Right, between the 4th Right and the 5th Right, was put in and marked. Refers to No. 30, prepared by Mr. Warburton, Manager, Magnet Works Mine.]

18045 [A plan of the 5th Right rope road, showing the No. 1 heading and the adjoining workings of Magnet Works Mine, prepared by Mr. Warburton. Was put in and marked. Refers to No. 30.]

18046 [A plan of the No. 1 Right mine and outcrop shows the 4th Right rope road prepared by Mr. Warburton, was put in and marked. Refers to No. 30.]

18047 Mr. Wade: Q Take Refers to No. 30, showing the No. 1 heading and the adjoining workings, what evidence of force did you see on the 1st side near Magnet Works mine? A There is a heap of stones at the north-east corner of the intersection of Magnet's working place with the back heading, and there is a large pile of stones round the props, showing that the faces were not safe.

18048 Q Taking the evidence in the cut through roof, what did you notice there? A I will have to get my notes to see that. [Witness referred to a note-book.] That notice was taken on the north side of Magnet's working place. The props were displaced on the side towards the heading.

18049 Q Do you remember the condition of the faces of the No. 1? A There was a gap of one foot at all in the centre under the last cut through but one, but one of that cut the rope, on the back heading, there is a water level that is trapped around the prop. It is a considerable surface. The water of the system at the north-west intersection of the last cut through and the back heading showed that I had been subjected to very great loss, a step about 1 foot was.

18050 Mr. Wade: Q Was not it burst? A No, it was not burst, but it was very hard burst.

18051 Q Was not it a failure? A No, but having going through would break it. It was tried like that.

18052 Q There was no force going through there? A But when horses go through headings the moment there is a shift.

18053 Mr. Wade: Q Was it observed? A It was observed. All the substance was not burst out of it, but it was highly strained.

18054 Mr. Wade: Q It was frayed, broken? A I do not remember it being frayed by breaking.

18055 Q Was it a hanging in places? A That is not an impression.

18056 Mr. Wade: Q Work side had the best rope then? A From outcrop. That is an impression. There was some dust and other material on the props south of the last cut through that had been moved, forcing rope.

18057 Mr. Wade: Q Which side was that moved dust on? A On the north side and sometimes on the south side.

18058 Q Was there much of it? A It was not very consistent.

18059 Q Could you say whether that had been subjected to heat or not, and, if so, how, was it a great amount? A It was subjected to a certain amount of heat—how much I cannot tell you.

18060 Mr. Wade: Q Perhaps you might be able to tell whether it was something short of or up to red heat? A I should say it would be at least a red heat.

18061 Mr. Wade: Q Can you say of heat as distinct from red heat? A No, I do not think you can at all. I do not pretend to be able to discriminate between hot and red heat in that respect, although the burning of the back of the props was only skin deep, as it were. There was a lot of broken wood, but the burning was not deep. If there had been much heat, the burning would have eaten deep into the props. I think.

18062 Mr. Wade: Q And the back of the props actually seem to have been partially burnt? A Yes, the skin of them was burnt, as I have said.

18063 Mr. Wade: Q A sign of what? A The outer skin of the back.

18064



Witness—A. E. O. Safford, 33 February, 1905.

18085. Q. You say an antagonist like this—how it got any depth at all? A. No, I took a knife and passed some of it, with the slightest cut you could get into the undermost portion of the timber. Some of the splinters, just like the tops of the timber, were laid. It was more burnt there, where the timber was splintering.

18086. Q. In how many places did you see that? A. On three props between the two cut cut-throughs.

18087. Q. Do you mean all the props? A. No, only some of them. It was at various levels on the props.

18088. Mr. Safford. Q. What level do you mean? A. Well, it did not extend from the floor to the roof.

18089. Mr. Wade. Q. Where would it be? A. Near the top—I think within about 3 feet of the top.

18090. Q. And you are saying that could, perhaps, be missed just anywhere up there? A. There was that indicated that. My impression of the props is the first heading was that there was more burning on that side going up, than on the opposite side coming down, that is to say, more heat and more deposited material.

18091. Mr. Hester. Q. That is on the east side, on the eastern row of props? A. Yes.

18092. Q. There was more signs of burning, or of heat on the small side of those props in the first heading? A. Yes.

18093. Q. And on the other props, on the other side, it was reversed? A. That was my impression.

18094. Mr. Bruce Smith. Q. There was more signs of burning? A. No, not burning, more deposited material.

18095. Mr. Wade. Q. Take this first cut-through, immediately off the front of No. 1 main heading.

18096. Mr. Hester. Q. Is not that really the northernmost line of cut-throughs? A. Yes.

18097. Mr. Wade. Q. It is the line of cut-throughs between Purcell's and Adair's working place.

18098. Mr. Hester. Q. It is really distributable as the northernmost line of cut-throughs? A. Yes.

18099. Mr. Wade. Q. There had been a narrow screen across the first heading near the opening of the cut-through? A. Yes, and we found that on the north-east corner of the western rib.

18100. Mr. Hester. Q. Or at the north western corner of the intersection of that line of cut-throughs with the No. 1 first heading? A. And that was dropped down towards the west.

18101. Mr. Safford. Q. Was not that board round a prop? A. It had gone round the corner to the south-west.

18102. Mr. Wade. Q. Was that before or after? A. That would be early.

18103. Q. Now, coming to the first cut-through on the first working place, Purcell's—how was the condition carried up to the first? A. By heading cloth across the cut-through, the way would go to the west.

18104.

18105. Q. The heading would be across the cut-through, so as to take the air up to the face; did you notice how the timber was which had been set on the cut-through taking them a step into head No. 105? A. The corners of it had been across the cut-through, we found round a post and a prop that had been driven where, and then the corners to the west working place, which had been set at the back of the props on the west side, had been moved bodily to the east side of the west line of props.

18106. Q. Can you remember anything else there? A. No.

18107. Q. Any signs of flame? A. I cannot say one way or the other.

18108. Q. The next head is No. 56, East and West, what do you notice in regard to that? A. A piece of timber was driven into that. That was fastened to the main rib, and a post was found further west down the cut-through.

18109. Mr. Hester. Q. Was it brought up against props? A. Yes, around props.

18110. Q. To a confirmation, we used a prop that was lying down? Q. Yes.

18111. Q. And the northernmost piece round a prop standing? A. Yes.

18112. Mr. Wade. Q. Do you remember seeing anything of a skirt down there? A. Yes, we did come across a skirt down there.

18113. Q. Do you remember where it was? A. Not particularly.

18114. Q. Taking the place as you go further in towards Adair's pillar, what are the divisions of force there? A. West.

18115. Mr. Bruce Smith. Q. They are all in the direction of west? A. Yes.

18116. Mr. Hester. Q. From east to west? A. Yes.

18117. Mr. Wade. Q. Do you know where the fire was seen, head 57? A. All we saw was the ribs there, that is all.

18118. Q. Was anything else left intact there, unburnt, in that locality? A. There was charcoal dust just about that point, in No. 57, on the eastern rib, immediately opposite the cut-through to the east, west the position.

18119. Q. Did you see any things there that were not burnt? [Witness did not answer.]

18120. Q. There is another line of cut-throughs to the west of No. 1, the first cut-through is the line of the 4th Night? A. Yes, the first line of cut-throughs to the left edge of the 4th Night.

18121. Q. What are the indications of force in there? A. To the west.

18122. Q. You know the lay of the main was found somewhere near the 4th Night? A. Yes, I have heard that.

18123. Q. It has been said that the section may have taken place somewhere near there—near where he was found—now, supposing a volume of air was being driven out from the 4th Night towards the 4th Night, and that this volume of air coming out, continued upwards just what do you think would be the effect on Morrison's light if this volume of air was driven up? A. I should imagine, if the air was driven down the 4th Night with anything like force, it would blow his light out. The light would have been blown out before the gasman had time to reach it.

18124. Q. True then? A. From the force of the wind prevailing the mixture that was ejected from the 4th Night.

18125. Q. You mean the light would have been blown out by the air as a pressure of that which came from the 4th Night? A. Yes.

18126. Q. Adair Smith said that he was half a mile away, over the head of the 4th Night, and so, he said he was partly blown off his feet and his light was blown out, but nothing else happened,—what do you think would be the result of that? A. Does he say whether his light was blown out before he heard the explosion, or was it afterwards?



20409 Q His evidence was that he then noticed 100 yards towards the main road, and then saw smoke and dust? A I should say that, if the main force put out his light at that point, by then it would have blown out Morrison's light.

20410 Mr. Johnson Q But at that point there was supposed to have been an explosion—at the point referred to by Mr. Wade the explosion seems to have reached the main road, and—  
20411 Q Morrison's light the evidence had put out? A That is what I say. If you presuppose a force coming that would put out Frost's light at the 2nd Right, it would also put out Morrison's light.

20412 Q Why, do not you see that we are assuming that the explosion took place at Morrison's light, and, then, was an explosion up to that moment? A Well, of course, if you assume that—  
(Interupted).

20413 Q We must assume that? A If you assume that, of course Frost's light would be put out by the force of the explosion.

20414 Mr. Wade Q But that is not what I said, Frost's light is smoke, and Morrison's light is smoke. Supposing a great force came out of the 4th Right and divided, some of it going to Morrison's place, and some of it going smoke and up the 2nd Right to where Frost was—  
(Interupted).

20415 Mr. Moore A It was "some of it."

20416 Mr. Johnson Q I understand, Mr. Wade, that you were going on the assumption that the explosion did take place at Morrison's light.

20417 Mr. Wade Q I am taking the theory put forward that there was an explosion at Morrison's light. What I want to argue is that there was a displacement of air which would put Morrison's light out before the explosive matters reached it at all, and I want to show that Frost's light was put out at the same way. Whether it was an explosion at a rank of air, it went through a point of space, and it would tend to drive the air in front of it over cushions or pad of air, and that is the force of fresh air would put out the light in each case.

20418 Mr. Johnson Q But then we have an explosion to show the force of the blast that came out of the 4th Right. It might have been very mild, and have dispersed itself.

20419 Mr. Wade Q I am assuming now that there was a strong blast. I will try afterwards to prove that there was. I will admit that that is an assumption.

20420 Q If the gas had spread anywhere near the 4th Left, where Morrison was found, what would you expect with regard to the 4th Left line, flag road or rope road? A I should expect that where there was an indication of gas there would be a pollution of force.

20421 Q Did you see any sign of that explosion anywhere where Morrison was found? A Very little force went down the left leading near the 4th Right.

20422 Q That is what? A Yes compared with the force at the main road. There were some forces west that way, but, speaking relatively to the forces that went in the main road, I should say that the force that went in the 4th Left was much smaller.

20423 Q What did you see in the 4th Left? A There were some debris and other material, speaking from memory material, from the position of the 4th Left with the main road, in the main. But that did not extend very far. It was in order 30 yards perhaps, where the evidence was made.

20424 Q In the 4th Left? A In the 4th Left.

20425 Q Did you see any current in the 4th Left opening? A There were some empty ships instead of ships on the position—that is, near the 4th Left position with the No. 1.

20426 Q That was going why? A Yes.

20427 Q Did you see any current? A There are no notes of any current.

20428 Q Now go to the Morris' place—you know where their bodies were found, where of their working place? A That is right.

20429 Q Do you think there could have been an explosion of gas at that point where they were found? A No.

20430 Q Do you think it is at all consistent with the evidence of forces which you saw? A No, I do not.

20431 Q Do you know anything that would take them, aside a danger board, in the ordinary course of things? A No, they have no right to go through a danger board. I do not see why they should go there. Their place was in line working order, there were rules there, and materials of that description, and I do not see why they should go up there.

20432 Q Do you know how far their bodies were found from the actual face of the No. 1? A No, but a good distance. The position is on that place [Sketches] [Witness looked at the plan.] About 100 feet I think.

20433 Q If there was an explosion instead of gas at the point where their bodies were found, how many feet would that have been? A One, and nearly two—nearly back to the second end-through.

20434 Q If there was that quantity of gas back from the face of the back heading, what would you expect to be the condition of affairs in the off's head, No. 105? A I should imagine that, if those places were foul to that point, it would be foul also in Percell's place, which was supplied by the same air-current. There would be gas in Percell's place and in those places in the left as well.

20435 Q Do you mean to the left, west of Percell's? A To the west of Percell's.

20436 Q Let us come to the 4th Right for a moment. Do you know or have you ever heard of any explosion being found in the roof of any of the southern columns in the strata above the coal? A Extending from the strata?

20437 Q Yes? A No.

20438 Q Take the Jiffy. I suppose the ordinary method of working is, first of all, to drive the headings, and then to drive the levels, and finally to extract the pillars? A That is so.

20439 Q Supposing there was gas gone off when you first opened the headings, what do you think in the ordinary course of mining operations, would be the likelihood of gas being found when you come to the pillars? A It would be usually less. The first opening in the mine would drive the major portion of the gas out, and the levels that follow have no drawing it, and what is left in the pillars is relatively less. The pillars themselves would not give off gas. In a sense like Kielda I should say that even supposing there had been gas in the headings in small quantities, there would not be gas in the pillars, because the draught is going on all the time.



20138. Q And, if the roof fell in the ordinary way, would there have any further tendency to drain the gas away? A No, I cannot say that. I do not think it would have any bearing on the drainage of gas. I do not think it would make any difference.

20139. Q Well, if this place, the Blaine gas, had been four years in the course of working, was supposing there was gas in the coal would you expect it to be well drained at the end of four years? A Yes, I should expect it to be fairly well drained by the time the pillars were being taken out, if not completely drained.

20140. Q From your examinations, which you have made from time to time, at the 4th Right, could you say whether it was going off blackdamp? A All over I get at the 4th Right was blackdamp—explosive gas.

20141. Q That was after the disaster? A Yes, and I made it my business to ask some of the men who went in man to man to Control, and worked at Kanabla; and they said they had never seen any explosive gas there, but it was black damp that they saw; and that supported my observation.

20142. Q Now we come to that part of No. 1 which was outcrop of the 4th Right,—did you see any signs of flow between the 4th Left and the 4th Right going outcrops? A No, the forces went from the 4th Right—why?

20143. Q Was there any indication of any kind of any flow going outcrops between the 4th Left and the 4th Right? A No, not that I saw. The gas was driven against a number of pillars, showing that the flow proceeded from the 4th Right outcrop, and the position of the pillars from signs of the fractures gave the same indication to my mind. The logs also, near the 4th Left, showed that they went in.

20144. Q Can you say whether there was any evidence of forces, any spilling of them, and, if so, where? A There was an spilling of forces from the 4th right where?

20145. Q Where did you see any spill? A From that point outcrops. From the 4th Right the forces were active to the tunnel mouth.

20146. Q Can you say whether the collections of force were great or mild outcrops of the 4th Right? A They were pretty great, I should imagine. A great number of the rules, the rules in every the road, were bent and thrown down.

20147. Q How far from the 4th Right could you trace these bent rules? A We could trace them a considerable distance—several hundred yards. Then, the coal was down in some places on top of its supports. These were falls that occurred subsequently to the explosion, I suppose, they covered a lot of the evidence.

20148. Q You are speaking of rules that were standing? A Rule that were visible. And there was a stick in the 4th Left which showed force, it was driven a fairly distance.

20149. Q Do you know the size of these rules? A Yes, I suppose they are about 10 lb. in the yard.

20150. Q The length of them? A, It has long and 4th under head and about the same length.

20151. Q Have you any idea what the pressure would be that would be sufficient to bend these rules? A No, I have no idea, but I should imagine it would be very great indeed. I never worked that out.

20152. Mr. Belknap: Q You said something just now about a rule being driven to the west. Are you quite sure about that? Have you got your directions right? A [After looking at the plan.] I should have said north west, and there is a heap of work that was done in this place.

20153. Mr. Wink: Q Did you see any marks near the 4th Right? A Yes, we got some marks at the underground side of the 4th Right.

20154. Q On the ground or on a slope? A On the ground.

20155. Q Did you see any other marks? And you are looking at the 4th? A On the western side of No. 1, outcrops from the 4th Right, we came across it on the coal with a piece of marks pushed in.

20156. Q Will you mark that on the plan to show where that? A I think it is on the plan.

20157. (Witness pointed out where the position was marked on Exhibit No. 35.)

20158. Q Slightly outcrops of the 4th Right in the western side in the corner of a workable? A Yes, moreover, who was with us, explained that there had been marks across the 4th Right and the outcrops in the north of it.

20159. Q Can you say whether it would require force to plant that across in the crack in the 4th? A It was pushed very tight.

20160. Q Then it would require force? A Yes.

20161. Q Great force? A Yes, it would require the force would be very considerable.

20162. Q How do you account for the indications of force you saw outcrops of the 4th Right, as to where the water power came from? A From the 4th Right, I think.

20163. Q Are you account for it in any other way than by its coming from the 4th Right? A No, I have been thinking the thing out, and that is the conclusion I have come to, that it must have come from there. That is clearly a direct and just looking at the two forces, one let gas in and the other let gas out from the junction of the 4th Right with the main No. 1 engine road.

20164. Q Do you know whether, at the time of a gas explosion—then your reading, of course—of the timber is displaced for any great distance from the point of origin? A My impression of a gas explosion, from my reading, was that the hammer is much more violent than I saw it in Kanabla, and that the force was more of a shattering nature, stronger, more sudden.

20165. Mr. Belknap: Q That is just impression from reading? A Yes.

20166. Mr. Wink: Q That is not quite the question I asked you. The question I asked you was this: When water is displaced by a gas explosion, do you find that there is any great distance from the point of origin? A That is, and depends upon the amount of gas ignited, and upon the rainfall force, but a gas explosion develops more energy than, say, a coal dust explosion, and the force would be greater.

20167. Q On page 112 of *Anthracite Work on "Explosions in Coal Mines"*, speaking about some theory advanced of a blast passing over long distances from the point of origin along a road, not in an explosive condition, it is said:

It appears to the witness that the evolved properties of volumes of air in the narrow passages of a mine are such that no such time can be reached at any considerable distance away from where actual explosion due to combustion takes place. A reaction from any be created some distance away, but reaction sufficient to move dust or debris leading from any appear to extend only yards from the actual explosion.

Assuming that this statement is correct, can you account for the bending of the four bare headboards of yards away as being connected with a gas explosion? A Oh, no.



- 18469 Q You say you have come to the conclusion that the force came out of the 4th light, and that it was a strong force? A Yes.
- 18470 Q Can you say whether a fall of roof in the 4th light would tend to set up a great force, or tend to drive out air from the 4th light at a great speed? A It would, if the fall was large enough.
- 18471 Q Assuming that there was a space of about 1 foot between the roof and the floor for the time being, and there was about 40 rods square of roof (assuming, however, that the approximate area covered of what velocity would be developed? A You could get velocity up to 700 miles an hour, after making an allowance for the air coming to the surrounding space.
- 18472 Q Assuming the whole of the air which was displaced by a fall of the roof had been driven out by the 4th light vent, how far would any disturbance at all in its velocity need be allowed under these conditions? A Of course there is a lot of speculation about calculations of that sort.
- 18473 Q How far does that? A Ten.
- 18474 Q You say the strength of the explosion will come in and you are assuming that a certain amount of air will escape into the pool, and not be driven out? A Possible.
- 18475 Q What allowance do you make for that possibility? A Fifty per cent. of the whole.
- 18476 Q Do you know what pressure that would give in the 4th light? A You get a pressure of a good many pounds to the square inch.
- 18477 Q How many? A Thirty psi—thirty lbs. or something like that.
- 18478 Q How far would that act? A Ten. Of course, as I say, you know it is quite speculative.
- 18479 Q My friend says, "The oil deposits, Your Honor, are low and false, it is more difficult to do."
- 18480 A Where? No calculation is not based on the roof striking, but on the falling velocity.
- 18481 Q What is the velocity? A What is your assumption with regard to the way the roof falls? A That depends a bit upon the conditions of the roof. I assumed to describe that the roof is a very strong roof in that particular part of the mine and such falls as great big falls or great big falls, and I should suppose it would fall very heavy, from what I saw of the falls and for of that place.
- 18482 Q Is there any other way you can account for force that was shown as coming out of the 4th light except by a force caused by a fall of the roof? A No. The position appears to me in this way—A force came out of them which spoke. That force, as I told you, had a great propulsive power, and was shifted and moved and left evidence on the track, and I think that, with sufficient power to come those stages, the force of the wind would have blown out all lights in the vicinity.
- 18483 Q My friend says, "Where do you say it split?" A At the 4th light.
- 18484 Q My friend says, "Did you see any evidence, or have you heard of any evidence, of there being a gas explosion which started at the 4th light?" A No, I cannot say that I have. So before we get out there we are on I found. These are nobody working there, so far as I know.
- 18485 Q That being so, we are no other alternative than a gas explosion at the 4th light; to meet the indications of force, or the displacement of air without an explosion? A No, I should say that one (the displacement of air) appears to me, from the evidence that I have seen, to be the correct conclusion.
- 18486 Q Take the appearance you saw against the wall of the 4th light—the dust being up. What does that indicate to your mind? A It would indicate the back of a blast in that direction.
- 18487 Q What kind of blast? A A volume of dense smoke and dust and dirt and coal.
- 18488 Q By what force? A By the propulsive force out of the 4th light, afterwards augmented by the explosion of the coal dust.
- 18489 Q Did you find any indication of that same sweeping of the dust against the roller onto culvert as well as the 4th? A Yes, it gathered force as it went on by.
- 18490 Q You say you noticed that your diameter is 345 miles as how would produce a pressure of how much? A 345 lbs. per square inch.
- 18491 Q My friend says, "Q Is it correct?" A Yes, assuming it falls about 10 yards square, 4 ft 6 in high, and 30 per cent. escape and such that and a of pressure from the edge of the gulf in the mine away, there is a sufficient pressure to give rise to air—700 miles an hour.
- 18492 Q What is the time factor? A Well, I took the roof falling 4 feet. I found the time it would fall from the fork, that the time equals the square root of the distance of falling divided by 32.1 in seconds.
- 18493 Q Practically less than instantaneous? A Yes. It comes to 2 of a second. Well, in that point there is a certain displacement, and, assuming 30 per cent. of that to go back and 70 per cent. to come out, you get a body of air propelled out at a certain velocity of feet per minute through an air-passage of a certain area.
- 18494 Q What area did you take? A 12 square feet.
- 18495 Q Twelve by six? A Yes.
- 18496 Q My friend says, "Q How do you see that that body of air, starting at that way, being propelled by that—what you say is a tremendous blast, has an immediate tendency to be blown on front, and to come to operate forward?" A No.
- 18497 Q Do not you see that it is not like a solid projectile; its operation is, a straight line forward, would do out in a very short distance if not retarded by something else? A Yes, and the resistance must come in.
- 18498 Q Where does it come from, except from a dust explosion? A Yes, that pressure gives a certain temperature, which would ignite dust spontaneously.
- 18499 Q So you believe in the dust explosion? A Oh, certainly, from these conditions.
- 18500 Q My friend says, "Q Now we come to the temperature of the gas. You know these investigations by Professor Bickham and Lupton as to the velocity of air and a temperature of 775 degrees?" A Yes, the figures are somewhere like that. I have a book (reading from a book). "From the coal dust alone the system took place at a temperature of 204 degrees Fahrenheit, and the mass fairly glowed with a dull red heat."
- 18501 Q From what point is that taken? A They do not give the actual temperature, but that is the total temperature, 204 degrees.
- 18502 Q My friend says, "Q At what pressure?" A That is equal to a pressure of 30 lbs. per square inch.
- 18503 Q That is an estimate of the pressure from the starting point of how much? A An increase of 228 degrees.
- 18504 Q Above what point? A The starting point is not given here.



Yours—J. L. O. Nelson, 22 February, 1933

19295. Mr. Moore: Q. That is the increase of temperature due to the removal of pressure from 55 lb. per square inch to 45 lb. per square inch? A. Yes, from atmospheric pressure.

19296. Mr. Moore: Q. Are not the tubes from 50 degrees? A. Yes, it is about 60 degrees. But I do not seem to be able to find it in this book. I think that may be about the temperature of Professor DeLong's laboratory.

19297. Q. It is an increase of 225 degrees? A. Yes.

19298. Q. What would you say was the starting temperature in the 4th Right on the day of the explosion? A. I suppose between 60 and 70 degrees—70 degrees.

19299. Q. How would you fit again that? A. I know that because, to my mind, it seems to me a fair temperature for a good—about 70 degrees. It never here here here in Knoxville.

19300. Q. Would the goal be cooler or hotter than the ordinary parts of the mine? A. The heat would be more apparent in the goal. It would be about the same temperature—about the same temperature as the rocks around it—about 70 degrees.

19301. Q. Would the pressure of carbonic acid gas have any effect on it? A. I did not take that into account in these experiments.

19302. Q. Your calculations were made on the assumption that the explosive and gas make no difference? A. Yes.

19303. Q. You say that a blast of 100 miles an hour would give a pressure of 567 lb. per square inch, which gives an increase of temperature of 225 degrees Fahrenheit, and, adding that to the starting-point, the temperature of the goal 50 degrees you get sufficient to reach the 200 degrees Fahrenheit? A. Yes.

19304. Q. Supposing you have the air driven along either at that temperature, 201 degrees or, say, slightly below it, what would be the effect on the air when it got to the dead ends in the face of No. 1 Right? A. There would be a certain amount of air driven in front of the blast, and that would be compressed, I presume.

19305. Mr. DeLoach: Q. May I ask at what point you calculate that the 201 degrees temperature would be reached,—at the crater from No. 1 Right? A. Yes.

19306. Q. Between that and the travelling road? A. Yes.

19307. Mr. Moore: Q. Let us come to the face of No. 1 Right again for a moment,—as pushed by the blast was driven forward at a great temperature up to the face of No. 1 Right, the whole blast would be compressed? A. Yes.

19308. Q. Would that help the matter at all? A. It would help the oxidation of the dust, and the yielding of more heat and more heat, and there would be an increase in the intensity of the glowing matter.

19309. Q. Do you think that would account for what you saw in the way of dusted or partially cooked dust in the face of No. 1 heading? A. Yes, I should say so.

19310. Q. And what about the distance which you saw at the last cut through in the No. 1 back heading? A. It would account for the evidence of heat on that instant—dark, too, I should say.

19311. Q. You say you saw some solid dust near the locality of that blow in head No. 32? A. There was some solid dust scattered on the whole in this way. I cannot say the next day. There were some shavings of solid dust there. That is the last evidence of taking I saw in the whole of Knoxville.

19312. Mr. DeLoach: Q. What do you calculate it to be? A. That the dust would.

19313. Q. That is not a long? A. It was proven, the entire code.

19314. Q. Can you describe that color? A. It is a red fire has been subjected to great heat, and from which gas has been driven.

19315. Q. The volatile constituents have all been driven off? A. Yes.

19316. Q. But if the volatile constituents have not been driven off? A. I do not suppose it would be in, so to speak, anything. And I do not know that all the volatile matter was driven off from what I call color that I saw in the place. It looked more like coal than anything I saw in Knoxville, and the pattern were about as big as small gas.

(At 1 p.m. the Commission adjourned until 2:30 p.m.)

#### APPENDIX

(On meaning, at 2 p.m., Mr. W. K. West attended to take shorthand notes of the evidence and proceedings.)

ALFRED GENEST GUYALD 881,333,4 previously sworn, was further examined, as under—

Examination in Chief by Mr. West

19317. Q. I will ask you to consider the outcrop side of the 4th Right. I want to ask you, if the face were out of the 4th Right at 500 miles to be, would it be sufficient to heat the iron bar there? A. I could not say. The iron bars are some distance from the 4th Right. My theory presupposes that the face would be raised on as the blast proceeded outcrop, and the blast at the side might have been greater or less.

19318. Mr. DeLoach: Q. Greater or less than the initial force? A. Yes.

19319. Q. Under what conditions would you get it greater, going outcrop from the 4th Right? A. It might be coming out and catch up more dust, and the dust in conjunction with the other, might create more heat.

19320. Mr. Moore: Q. You mean that increased supply of oxygen might increase the heat? A. Yes.

19321. Q. Where is the first point you get a supply of oxygen? A. From the curtain cut-through, and there is the No. 2 heading.

19322. Q. Between the 4th Right and the junction of No. 2 Right are there any openings that would increase the supply of oxygen? A. There may be none.

19323. Q. Now, suppose, there was only 5 lb. of force in the square inch, do you think that would be sufficient to heat the bar? A. I have not thought the matter out.

19324. Mr. DeLoach: Q. There might be greater force than that? A. There might be greater or less force.



19373 Q You do not know? A I do not know.

19374 Mr. Wade Q There was evidence that a man was found in the telephone cabin, who had a drill through his thigh, and his trousers were torn. Do you think that that would be consistent with falling in through an air lock was the primary factor? A It may have been.

19375 Q How well exposed in the witness statement. He stated that he was in the 4th flight rapid room, and that there was No 8 tank in danger? A Yes.

19376 Q And he said that a blast of hot air came along and blew his light out. Do you know how far that could be from the 4th Left—how many yards? A Perhaps twenty.

19377 Q From the 4th Left it would be 20 yards or less? A About 20 yards, I should say.

19378 Q Would you expect that the wind which blew Timmerman's gas out would also blow Morrison's out? A Oh, doubtfully—I should think so.

19379 Q Have you any knowledge of the effect on the skin by it being peppered with hot exhaust? A I have read Mr. Hollins on the matter, but I have had no personal experience.

19380 Q What does he say? A He says that burning might cause—there's some might be burnt on their faces—but it would only affect the outer skin.

19381 Mr. Howe The matter has been referred to before here. The Commission can desire its information from the report as well as from the witness unless he is an expert.

19382 Mr. Wade I will not take that matter any further.

19383 Q Do you know of your own experience whether a man's hair could singe without a flame? A If you had hair over a flame a certain distance away from the flame, the hair is singed by the heat from the candle. That is obvious.

19384 Q You do not agree that if the hair has become only it must be caused by flame? A I do not know anything about it. It is not an expert.

19385 Q If there is a light at the end of a pipe, do you think that would account for the appearance of singeing on the man's hair? A Perhaps it would.

19386 Q Coming back to the 4th flight for a moment, did you notice any pipes in the roadway? A Which part of the 4th flight?

19387 Q On the good side of the travelling road? A There were some pipes there.

19388 Q Did you see any anti-dust or alkali there? A I have seen some used or stuck there on the inside towards the gas.

19389 Q How were the pipes which had the red dust on them? A In my memory arrive on night, it was the pipes on the outside rail.

19390 Q Which in the roadway and—the one nearest the gas? A Yes.

19391 Q Can you explain that? A That might be explained by the fact that I understood that these pipes were taken out of the pipes and stacked there, and my opinion was that the blast carried with it a certain amount of dust and got stuck, and it was blown over the pipes.

19392 Mr. Justice Q You say a certain amount of dust and exhaust? A I mean small coal and refuse.

19393 Mr. Wade Q Would what you saw on the pipes be consistent with the dust coming out? A I remember so.

19394 Q Now I want to ask you—do you ever find the temperature at which the air that came out of the 4th flight was unusually high? 225 degrees Fahrenheit or was it less? A It is a difficult thing to say that it was unusually high. The point which I wish to make is to assume that temperature at that point would give trouble. These might be met at circumstances were favourable to that condition, and perhaps under these conditions it would be lost.

19395 Q Do you mean to say that it may have been below 225 degrees as it came out, and that the temperature increased as it went further along? A I think it was necessary that the temperature should get to certain point.

19396 Q If you get an increased supply of oxygen as it got towards No 1 level, do you think that would increase the temperature? A I do not think I am competent to give an opinion about that.

19397 Q One witness named Stafford stated that in Price's Bay he saw a body of the coming down the a pipe towards him—about do you think that might have been? A Doubtfully the gas travelling or the reflection from it.

19398 Q If he was able to get very close to it and witness it, do you think it could have been the flame of the explosion? No, it must have been the reflection under these circumstances, as it would have certainly been.

19399 Q Do you know at what point the State of gas replacement started? A It has been variously estimated.

19400 Q As far as a man can hear, at all events? A Oh, yes.

19401 Q If you knew that one had been drowned in the 4th flight, say, within twelve months of the 21st of July last, and it was known that the coal was likely to fall in there anything that should have been done besides withdrawing the men from there? A Not that I am aware of.

19402 Mr. Justice Withdraw the men from the 4th flight?

19403 Mr. Wade Yes.

19404 Mr. Justice There was no one working there.

19405 Mr. Wade Q Supposing the men [not heard] there work, and the trouble is about to be withdrawn, is there anything else to be done? A Not a common practice to withdraw the men when you expect a fall.

19406 Mr. Justice Q Would you estimate them on the surface on the other side of where the fall takes place, or from any area round the fall? A You would withdraw them from anywhere where it is likely they would be affected—they would be affected probably some little distance from the fall.

19407 Q Do you mean affected by the effects of the fall? A Supposing the men saw a piece of ground with the props drawn out and you expected a fall—then you could not allow the men to work close up to it.

19408 Q What was the effect the first night when a large area than you expected? A Yes.

19409 Q There is danger of a fall extending? A Yes.

19410 Q It would not be because of any other work coming from the GB? A No.

19411 Mr. Justice Q A fall is a common thing to expect? A Yes.

19412 Q It is a part and parcel of the working of a coal mine? A Yes.



Witness—A. E. O. Taken 10 February, 1906.

19275. Q Have you ever known of a case where a fall of roof has caused very much damage? A No; I have not. I have had experience as to falls at Central, where some down 35 degrees may have been banged about, and where the vibration has caused the shingles to be thrown down. That is the largest I have seen.

19276. Q Is that the only case? A That is a special case which I noticed. Other falls have taken place at night, when I have not been there.

19277. Q Otherwise falls of roof take place, and no doubt follow down? A No, they subside the timber and the roof falls in its little small sections, and you get no bottom.

19278. Q If you have a large section of roof take the riving of a beam as the roof—can you describe how it comes away? A It depends on the condition of the roof, and the conditions vary, when it is a hard roof it falls in big masses, but if it is a painted roof it falls in small pieces.

19279. Q Is a painted roof, does it fall given by piece? A Sometimes it comes off and falls in the gull, and then another fall takes place and so on like that.

19280. Q We had some evidence given here by different people about a lightning up of something which takes place when a mine goes up to the top of the roof, and what has been described as a "humping" of it? A I have heard of that.

19281. Q Do you know whether that can take place quite apart from there being too damp in the roof? A Chemically speaking, I believe that it is the gaspore. In the case you speak of the shot was fired, the roof broke, and the gaspore does not get proper relief, and the gas—the carbon monoxide—in the mine or the mine will give a flame.

19282. Mr. McArthur. Q Have you had any cases of the kind in your own experience? A No.

19283. Q Have you heard of them? A Mr. McArthur was speaking about the matter to me some years ago, and we discussed the question, and I thought of my experience.

19284. Q Have you ever heard any reports of cases of the kind having occurred on some under your charge—reports made by your own officials or workmen? A No.

19285. Mr. Wolfe. Q I am going to ask you about these recommendations. The first is that Managers, under managers, deputies and shot-fires should be held certificate by examination. Now, supposing that examination was made compulsory, and that notice must not pass it, do you think that before appointing them they ought not to be examined by the mine Manager? A I think that I should like to satisfy myself as to a man's competency, in addition to any certificate which he might hold, and I say this although I am a member of the Hotel of Examiners.

19286. Q For what purpose would you examine him? A To find out whether he was a good practical man and understood the thing. Matters of that description are best found out by oneself.

19287. Mr. Wolfe. Q So you are suggesting that the examination should be anything but a preliminary one, and it would only give a man the right to accept an appointment.

19288. Mr. Wolfe. I understand that the object is that a mining Manager should only be allowed to pick those who have passed in his examination.

19289. Mr. Wolfe. Just to a further point pass an examination before the public can ask him to come into Court and testify as a witness or otherwise? A No. Mr. McArthur is in error when the Manager must be bound down to employ a man at shot-fires who has passed such an examination.

19290. The Witness. I may say that, I have appointed that-fires because they have been pointed, and we get a lot and take over the mine, and see what they know about gas. I then send for a man and talk to him, and if I am satisfied a man is competent, I appoint him.

19291. Mr. Wolfe. Q Is that the way in which you appoint deputies? A Yes, that is the practice.

19292. Q What do you do? A I talk to them and make them demonstrate practically how they should do their work, in order to satisfy myself that a man would do it correctly. That is the practice that I have carried out at West. Bank.

19293. Mr. Wolfe. Q There are various questions which a man should know? A Yes, a man should know a great deal of his own, and should not be easily deceived.

19294. Q And should be not have met? A Yes, and it is also a question of a man's having previous force. If he is confronted with a difficulty, he should be able to face it and to do the best he can under the circumstances.

19295. Mr. McArthur. Q You can only find out these things by knowing a man and talking with him yourself? A Yes, you get to know a man best in this way, you are a man doing work him.

19296. Mr. Wolfe. Q Suppose a case arose of taking an official from an adjoining mine? A When I write to the Manager and get the history of the man, and satisfy myself whether he was competent or not, I appointed a deputy at Central who could hardly write a report, and who certainly could not pass a written examination, but he would do good honest practical work.

19297. Q At what age do men generally become deputies? A The deputies at Central were generally middle-aged men. The youngest shot-fires we had was 39 years old.

19298. Mr. McArthur. Q Did you have a deputy who could not write? A He could write, but he was not well able to.

19299. Q You know the deputies here in West? A They would write, but I report, but he could not write, but I put a lot of reliance on him because he was a man with a great deal of experience.

19300. Mr. Wolfe. Q It is your thought would be able to do anything as an experienced man where pen, ink, and paper are concerned? A It is not that, he is sufficient education to say what he knows.

19301. Q If the examination in writing was compulsory, would it shut out many men who would otherwise be fit for practical requirements? A At the present the provision of the Act is such that not many middle-aged men go on to become shot-fires, that is to say that they have not got the educational value. Although the examination is not a written one—no sample as possible—in 1894 you got 17, however, and if any of them were really valuable men, who knew all about gas and timbering, not how to lay things right and safe in a mine.

19302. Mr. McArthur. Q By the way, you are one of the Examiners for the State? A Yes.

19303. Q And you speak from the point of view of an Examiner as well as of a mine Manager? A My experience as an Examiner is very little. I have only had one examination so far.

19304. Q You are no more competent to find out the qualifications of a man of you capacity as an Examiner than you are in your capacity of a Manager? A No.



19090. Q Do you think you are as good in your capacity as an Examiner? A If I wanted a deputy to do work in a mine, I should use my own judgment about the matter, and should fire to him as soon as possible and find out what he is worth.

19091. Q As a matter of fact, as an Examiner, you could only ascertain to a certain extent his practical knowledge? A To some extent there is an oral examination, but which we try to find out the merits from of a man.

19092. Mr. Hanson. Q You may perhaps object as to examining? A Yes.

19093. Mr. Fisher. Q Is the element of truth sufficient a very serious one in making an appointment? A Yes, you want to know a man—and to know whether he will tell you the truth.

19094. Q Supposing you took charge of a mine, and did not know the men, and wanted to make some appointments at once, what would you do? A I should simply interview them and take the matter over.

19095. Q Would it not be a good idea to know that you had certain people at the mine, and that those men had already satisfied these people as to their knowledge? A One of the deputies at South Butte had a second-class certificate. This man's deputy was something like the man I was speaking of before—a man with a limited amount of book knowledge, but you could depend on him to know his job. He would not actually represent a written examination, but as an examination you could see that he understood his work previously, although he might slack down, and not be able to tell all that he did know.

19096. Mr. Fisher. Q Would he not also slack in a time of danger? A No, some men can leave themselves up for danger. I do not want to discount the utility of examinations, but a Manager has a better right to say from his own personal knowledge whether a man is competent.

19097. Q Do you not think the same argument would apply with equal force to the case of a Manager, that you should not take a Manager on his certificate, but should wait to see whether he is competent?

19098. Q Why? A Because the man who has control of the mine has the right to employ an independent person that he knows his business. The Director who employs him has not any technical knowledge of the work which the man is going to do, and so he must own a certificate. When he is appointed he is responsible, and if he is an honest man he will see that the men who are appointed under him are competent. He knows exactly what the men have to do, he knows the technical part of his work, and his judgment ought to be sufficient.

19099. Mr. Fisher. Q If they fail, he suffers? A Yes.

19100. Mr. Hanson. Q Ask other people not to suffer with their lives? A That is so. I do not think that you will increase the safety of a mine by having such examinations.

19101. Q Will the list of those having no mine in an examination make them less competent? A I would not like to say that. Did I say that, somewhere, when people get certificates they rely on them, they cannot be taught.

19102. Q The suggestion is that the examination for deputies and shot-fires should be merely an oral one? A Why not let the Manager choose them?

19103. Q It is suggested that sometimes the Manager puts his favorites? A Oh, that was old suggestion of yours.

19104. Q Did you ever have any accidents? A You alluded to that the Arbitration Court.

19105. Q You never heard me allude to it? A I beg your pardon if I am mistaken.

19106. Mr. Fisher. I heard it made in the Arbitration Court.

19107. Mr. Hanson. Not by me. I do not want any personal element introduced into the matter. If I ask the witness a question, I hope that he will answer it without introducing any personal element into the answer.

19108. Mr. Fisher. There is no personal element in what I am speaking about.

19109. Mr. Hanson. Q Do you think that it is an old suggestion of mine? A If I made a mistake I apologize. I did think it was you that said it.

19110. Mr. Fisher. Q Did you ever know a Manager who did appoint friends of his who were not competent, and who endangered the safety of the mine? A I have never done it myself and I have never known of any being done.

19111. Mr. Fisher. Q Let me ask you this—you had a deputy who, a fortnight ago, ordered a mine, who was a shooter, to go out of a mine where he was using a flare light in a section where safety-lamps were used, to do some work? A That statement is not true. A shooter was told to go from No. 3 to No. 4, and that a man would be there to put him right. We have a large carbon head there about 2 ft. 4 in. x 1 ft. 6 in., and it seems that it talked him or allowed him to pass that point under my personal attention. The boy who took up the mine could read, and he had no right to pass that point.

19112. Q Supposing the boy could not read? A Then the confusion would be different from what they were.

19113. Q Did the deputy who ordered him to go do so without a word of caution? A We do not caution men for everything at South Butte. We do not caution a man when he goes into a mine to read that he does not bump his head. He knows his work. We look upon it that they as far as their ability will allow them, should keep the mines safe.

19114. Q Do you not think that if a boy was using a flare light before that he should have been warned, you asked that the shooter start with a flare light to another section? A The shooter got the rule, and knew some more and asked the reason why. They knew the reason why, and they knew no right to want the miners to break the rules.

19115. Q You say that they know the reason why? A It was known over the whole of the district.

19116. Q Might it not have been a more well-told story? A Yes, but I am not going to stand any conference on such matters.

19117. Q Did you ask the deputy anything about that? A He told the boy that a man would be there to see that things were done right.

19118. Q I want to know whether you asked the deputy to give you any statement about the matter? A I had a written statement from him about it.

19119. Mr. Hanson. Has the witness anything to do with the Commission?

19120. Mr. Fisher. It is a question about the competency of a deputy.

19121. Mr. Hanson. This raises the question merely of the competency of one particular man.



18476. (Witness) This depends upon you are speaking of and to whom Mr. Barker objects, on one occasion acted with a great deal of courage in keeping things safe when an unexpected accident happened. This amounted to me that he was a man with a considerable amount of reserve force, and a man who knew his business. We cannot tell every man every morning what details of his work.

18477. Mr. Barker? Q There is more reason to advise people about the use of safety-lamps. A I think, sir, as I have said, to have danger-bells printed in legible characters and put in prominent positions so that anyone could see them.

18480. Mr. Webb? Q Suppose it was ordered that there should simply be an examination. Do you think, as Mr. Manager, would sufficient upon an examination himself? A. I suppose as I should be personally responsible I should exercise my own judgment as well.

18481. Q Do you say whether manager men who are not fully educated there as a certain extent of surveillance when they are before witnesses? A. Yes, there is.

18482. Q As distinct from their manner when before their own Managers? A. Yes, that is true.

18483. Q It has been proposed that the holders of Service Certificates should pass an examination within a limited time, or their certificates should be cancelled. Would that work fairly on the interests of the holders of such certificates? A. No, I know several men whose experience on practical subjects I value, and I can go to them and talk over matters with them, learn their opinions and learn to what they have to say. These men may not have had the advantage of education in their early days, they are aged men now—nearly 50 years old—and I do not think that at that time of life it is to study a lot of technicalities such as might form part of an education in early life.

18484. Q Are these men in this country who hold certificates of service from England? A. Yes.

18485. Q Do you think that any basis of service gained by experience in England is any more than those gained by experience in New South Wales? A. I should say that they are probably worth more, because the mines in Britain are deeper and the conditions are more variable.

18486. Q You know that there is a provision in the Manager Act here that a Manager's certificate can be cancelled on proof of incompetency? A. Yes.

18487. Q Do you think that a sufficient protection to the mining community? A. I think so.

18488. Q Now I come to the recommendation No. 2 which proposes that the Inspectors shall be vested with sufficient power to order the use of safety-lamps. Would you place any limitation on the powers of Inspectors in this matter? A. There is no doubt a difficult question.

18489. Q Take the case of whether you would agree with them? A. I know that Inspectors would not as a rule order them if they thought they were unnecessary. In any event I think a reference to arbitrators in the case of a dispute would be sufficient.

18490. Q You think it would be a fair thing to leave the question of the introduction of safety-lamps either the arbitrators chosen of the Act? A. Yes, and I think that the Manager would take great responsibility upon himself who would ignore the recommendation of a Government Inspector on the matter.

18491. Q There is a recommendation that while the matter is before the Arbitration Court the men should be withdrawn? A. That would not hardly be on the miners, and probably on the owners also.

18492. Q Then, again, what would be the difficulty if you were compelled to put safety-lamps on a mine temporarily before the order was made? A. There would be the first cost.

18493. Q Would that be a serious thing? A. The expense would depend on the size of the mine.

18494. Q Do you think that it would be a fair expense to put the mine in, if it should later on find that the lamps were not necessary? A. It would be hard to say I think.

18495. Q The suggestion has been made that perhaps the Government might supply the lamps for the time being? A. I think the Government might supply few more any.

18496. Q You think it is a fair burden to put on a mine owner before the order is made? A. Not unless it is provided that, in the event of an order being made for lamps to be put on, the Government should pay the cost.

18497. Mr. James Smith? Q You have not put before the witness the proposal that the Government should have on hand a stock of lamps and let them to a mine until the Arbitration Court had given its award? A. That would be a fair thing.

18498. Q You would have to pay for the use of them? A. Yes, that would be a fair thing.

18499. Mr. Webb? Q The third recommendation is about the substitution of gas for furnace ventilators. If you found a furnace giving adequate ventilation, do you see any reason why it should be changed, and a furnace started? A. No, I think that is a matter that ought to be left to the owners. If you have furnace ventilators of a mine doing adequate work, I do not see why you should put a fan on, but we all know that it is far better the better system of ventilation.

18500. Q A witness named Wynn suggested something about the movement of what the Cleveland Colliery being strong upon one occasion. Did you see that statement? A. Yes at the point. I thought that statement was dropped at some stage.

18501. Q Do you remember what the statement was, and what the facts were? A. It is the spring of 1900 our last arrival, and we were doing all we could to get it built. I was paying breakers £2 a day on Sundays to do the work. We had the statutory amount of air coming into the mine, but I thought that the air ought to be better, and I was doing all I could to get the fan erected. Mr. Wynn and Mr. Wynn were appointed check inspectors, and they went into the mine. I did not accompany them; but they had the under-managers with them. I returned to me and said that they only got a certain quantity of air in a certain district. He said that the men were stopped when they were entering the mine south road, and they said that the statement was out of order, but I did not think their statement would be a result under the circumstances. He also said, "I shall I send them out tomorrow to narrow meaning?" They put this in the book.

18502. Mr. James Smith? Q Put what in the book—the statement about the men? A. No, the report. They said that they had examined a certain district, and had only found a certain quantity of air. They sent the report to the Government and Mr. Wynn was sent up to investigate the matter.

Mr. Wynn returned more so than I had got. We went to the dip and the examination would not work. I went out and got more, and we got sufficient air. He told me, "I am glad you have got sufficient air—I will report to the Department." I thought nothing more about it, and a little time after I got a letter drawing attention to Mr. Wynn's report. I felt annoyed about this, because when Mr. Wynn found it right they ought not to have said anything about it. We got the fan going. It was Mr. Wynn's defective statement that caused the difficulty.



19463 Q Mr. [Nelson] Q Did you see it? A No.

19464 Q How do you know it was defective? A The under manager told me, and Mr. Vardy told me.  
19465 Q Do you know that Mr. Wyne said it was not wrong? A No. It could not have been right, or would not have stopped.

19466 Q But you say that the Government Inspector found a sufficient quantity of air? A Yes.

19467 Q I thought the Government Inspector said he did not find it? A No.

19468 Q He said that your machine was wrong, and he was right? A Afterwards Mr. Ryan got his machine repaired on his own. I tested it with mine, and found there was no difference between the two machines.

19469 Q You gave me Mr. Wyne's machine at all? A No, but I know what Mr. Vardy told me.

19470 Q He told you that it had stopped? Q Yes.

19471 Q You do not know anything about the machine? A I did not take it to prove to someone that it was safe.

19472 Q Do you admit the possibility of getting a greater quantity of air on the second occasion than on the first? A No, because we no longer in the room.

19473 Q Did you see the furnace the first day—how it was working? A The furnace runs every day.

19474 Q The furnace may be lower, or it may be on full steam? A The furnace is operated three times a day. If there had been any variation, I should have heard about it.

19475 Q Do you not know that the regulating of the air is mixed with the furnace power? A There is a constant current with a furnace.

19476 Q Yes, about that it is quite possible to get a certain register to-day, and another one to-morrow? A Yes, under different circumstances.

19477 Q Mr. [Nelson] Q Mr. Wyne says, 'The Government Inspector was instructed to immediately go and test the accuracy of this report.' He went, and he took round with him the man that was with me (Robert Vardy). He showed the Government Inspector where we measured the air, and the Government Inspector's measurement agreed with ours? A I think, if the records of the Department were taken, you would find that the meter would be different.

19478 Q Recommendation No. 4 has reference to waste workings. You do not believe in waste workings being sealed off? A No.

19479 Q There is a recommendation that all out-droppings should not be more than 32 yards apart (No. 3). Do you agree with that? A I think that would be very arbitrary. The principle is a mine is to make poor places as large as you can. You avoid mines and crevices and other troubles that come on by the use of narrow pillars.

19480 Q Recommendation No. 7 is that there should be a periodical inspection with the hydrogen flame—once brought by the mining people, and the other brought by the Government Inspector. Now, what I want to ask you is, first, do you think it is necessary, and, in the next place, is it desirable? A A lamp with a hydrogen flame is not a very safe thing, unless the person who is using it possesses the necessary skill and experience with regard to it.

19481 Q In regard to the time that it takes to make tests? A It takes some time to make tests.

19482 Q Does it take longer than with the ordinary safety-lamp? A Yes; you have more occupations to perform.

19483 Q If you had to go through that process in each place in the Colliery, how long would it take you? A It would take over a week to make tests of any size.

19484 Q As to the mode of obtaining the hydrogen? A You have to order the steam from England; and sometimes the cylinders had been with all the hydrogen out of them.

19485 Q Do you know that the shipping companies refuse to carry these stores for fear of their explosion? A The lamps which I had at South Wales come from Berlin.

19486 Q Can you say whether the ordinary safety lamp is sufficient as a gas tester to provide for the safety of the mine in the mine? A Up to a certain point it is. There under a certain set of conditions that it would take a long time to explain. But if the mine was not only the Manager would know. I would not be satisfied always to rely on the test of the ordinary lamp. I want to make a finer test sometimes, but I know how to make these tests, and when they should be made. These persons connected with the mine know when these tests have to be made.

19487 Q You would leave it with the Managers to make tests from time to time? A Yes.

19488 Q The ordinary examination of the mine by the night foreman with the ordinary lamp, is sufficient to guard against risk? A Yes. Of course that is guided by the knowledge and experience he gets from the Manager. I carry a hydrogen lamp, and the circumstances which I get are taken in conjunction with those which the foreman feels in his own.

19489 Q How many circumstances are made of working places in the course of twenty-four hours, in South Wales? A We examine three times at least in one section and four times in the other.

19490 Q Is the test only three hours? A Yes.

19491 Q In addition, there is the Chief Inspector's examination? A Yes.

19492 Q And the examination by the Government Inspector? A Yes.

19493 Q Do you think these are ample for the purpose? A Yes.

19494 Q It is suggested that an ordinary safety lamp cannot find the 1 per cent of fire-damp which is dangerous in conjunction with coal-dust? A The Manager of the under-manager should have a hydrogen lamp, and, if they knew that there was any fire-damp, the place would either be watered or be shut at all first.

19495 Q Do I understand that 1 per cent of fire-damp is only dangerous in conjunction with coal-dust? A Yes.

19496 Q If it is dusty, you water the mine, and you then get all the protection you want? A Yes; and by increasing judgment as to the kind of circumstances which you can.

19497 Q You want to keep the dust down? A We water in the place where the dust is found.

19498 Q And, if you found 1 per cent of gas with the hydrogen flame it would still be necessary to water a dusty place? A Yes.

19499 Q There is a recommendation (No. 8) that a minimum of 300 cubic feet of air should be provided for every horse instead of 180 as at present? A There is a recommendation that the Inspector has power to order an additional quantity of air if he so orders it is necessary.



Witness—A. E. D. Sullivan, 22 February, 1935.

19103 Q Recommendations Nos 6 and 10 deal with the questions of doors—and double doors are recommended on drives between main aisles and main headings and aisles? A I have an objection to those as roads where double doors would be needed for the purpose of protection, where the roads are travelled by horses and by carts, but it is hardly necessary to put double doors between main aisles and main roads, where the doors are only kept for the purpose of extinguishing old workings.

19104 Q You would use double doors when the roads are used for bridge purposes? A Yes; where there are road bridges.

19105 Q Would there be any difficulty in the main road where you have the main caps travelling?

19106 Mr. Sullivan [ I do not think they should be there at all.

19107 Mr. Hume [ I think I would avoid them altogether under those conditions.

19108 Mr. Wade [ There is a recommendation (No 11) for a weekly measurement of air in each section. What about this? A I do not know what the object is. We measure the air once a month now. The ventilation is pretty well the same every month. It does not vary very much, in case of any change the matter is reported, and we check it.

19109 Q How do you take the air in the working face—can you use the anemometer there? A You have to work it in the commencement or middle of a split.

19110 Q Can you tell the current of the air by the direction of the light? A If you have a red light you can.

19111 Q If you have a safety lamp? A You can tell by the dust—he taking up a handful of dust and letting the wind carry it.

19112 Q It is suggested in recommendation No 12 that there should be an extra supply of safety-lamps at each mine. Mr. Atkinson has suggested that there should be a supply equal to one fifth of the number of persons below ground in a mine whose safety lamps are used, and of one-tenth in cases where safety-lamps are used? A I agree with that.

19113 Q Something has been said about safety-lamps at the Mount Koola Mine. How long after you arrived was it that you got a lamp? A The men were getting them ready.

19114 Q How long did you wait? A We waited for about ten minutes, until some others came up, because we wanted to have a consultation.

19115 Q Did you get a lamp then? A Oh, yes.

19116 Q I am told that it is very rare that in the conditions which lamps would be in at the Metropolitan Mine. A Yes, lamps improve by use.

19117 Q From what you saw at Mount Koola, personally did you think that there was any likelihood of having to use safety-lamps? A Certainly, I did not. I looked upon the Mount Koola Mine as the safest in the district.

19118 Q It is suggested that it should be kept in three lamps? A If you keep out in lamps it forces ventilation, and the air goes thick.

19119 Q Do you know whether any lamps come from South Africa? A I want to Cardinal, asking them to send lamps. There were some lamps from South Africa.

19120 Q Now with regard to recommendation No 13 that the travelling and heading roads should be entered—what do you say about that? A Well, it is desirable, if you can do that without interfering with the road. We water some of the travelling roads in South Africa on the bottom and on part of the sides. We are saying here it would do to enter the road, but I am afraid it will break it up. If the roof gets water on it, it soaks and splits. All the places where the shots are wanted. In the heading road there is a big amount of air, and the roof would be liberally wet and dry, and would crack.

19121 Q Do you know of any cases where air plants, or lengths of a mine, have failed to check explosions? A I have read of numerous mines that have been like that.

19122 Q Do you mean the Fox spring case? A I think that is it. If you enter where the shots are fired, you remove the danger to a very small degree.

19123 Q When is the length which you would water? A Twenty yards all round, and instead of gaspewer I would use safety explosives. The difficulty is to get safety explosives. We use so far away from England, and they are taken off the list of permitted explosives from time to time.

19124 Mr. Atkinson [ I think have not been taken off? A Several have been, and, besides, some of them break up the dust when you use them.

19125 Q You mean some of the permitted explosives? A I have had some trouble in Cardinal with the "Ball Dog" explosives. There is a slight gloss—it takes it like about a dozen glass stones.

19126 Q And you hear that it will be removed off the list? A I hear that the mines are withdrawing it, and are asking sulphur and other chemicals to make new fuses. One choice is limited in the matter of explosives. You must have something to get the coal down in a workable condition, and with no danger to the mine. With Roberts you have to close it, and it becomes dangerous.

19127 Q That applies to the new explosives, as well as to the others. I have had an experience with Roberts for thirteen years, and we did not find it dangerous very much. We found it satisfactory in the mine, due to some defect in manufacture. Some part of it explodes, and some part of it is what is the fault? A I have seen some of it left.

19128 Mr. Atkinson [ You had some more made last week? A We had the others made, that was the only difference.

19129 Mr. Atkinson [ You said that a dynamometer is indispensable? A You can fire the "Ball Dog" explosives with a safety fuse. All that is required is a small tuffet dash to start it going. You can fire it with a fuse or a wire. The fuses are so weak that you can hold them in your hand and let them off like a candle.

19130 Q There is a fuse? A Yes, but it is neutralized by some compound which reduces danger to a minimum.

19131 Q Do you approve of the use of a fuse in a gassy mine? A Of course, it would be better if you did not shoot at all, but that would save a much as increase of expense to the mine that they would be acceptable, and you could not work them. It would be much better, however, if you could get the coal down without any shots. I do not see any danger in firing a shot with electricity.

19132 Q I think that the danger arises while you light a shot with a fuse—but I do not say that it is safe to fire anything in gas? A If you make a test, and find that there is no gas present, and water. You shoot 20 yards, I do not think there is any danger in firing with a fuse, although it is better to fire with electricity.



- 18200 Mr. Bruce Smith: Q We have evidence of it. It amounts to thousands of tons. Supposing two pillars went left there, and not taken out, would that other one explode? A No.
- 18201 Q What is your reason for saying that you do not think there was any gas in the section that came out of the gulf? A I will tell you—take your theory.
- 18202 Q I have no theory at all—tell me what you have to say against it. What reason is there to say that this disaster was produced by an abnormal escape of air with nothing in it? A Because the evidence of force support it.
- 18203 Q Simply the evidence of force? A Yes.
- 18204 Q You do not think the evidence of force is compatible with the presence of gas in addition to air? A No, I do not.
- 18205 Q The elaborate calculation—about 500 miles an hour—that is based entirely on the assumption that the 40 yards square—? A Forty-foot yards square.
- 18206 Q Did fall in one year much more? A Yes.
- 18207 Q You have no reason for saying that? A No, it is a matter of speculation.
- 18208 Q May not the fall of the 40 yards square have doubled down to each small quantity so to have extended over a considerable period? A I think the evidence is opposed to that.
- 18209 Q Why? A Because the coal immediately over shown by freon, and a part of that nature would simply fall in one block.
- 18210 Q There is no evidence of any not horizontal shape in those portions of the roof which have fallen? A After it falls to the ground it breaks up.
- 18211 Q How you say after reason for supposing that it fell all at once? A No.
- 18212 Q Have you ever known a fall of that extent to fall simultaneously? A I have seen falls after taking out the pillars.
- 18213 Q As large as that? A Coal mines have never existed shallow to that.
- 18214 Q The whole of your theory depends on your assumption that the fall took place simultaneously? A There is one word there which I do not use.
- 18215 Q The whole of your calculations of force depend on the idea that the fall took place simultaneously—in one block perfectly? A Yes.
- 18216 Q I think that from what you have seen you will admit that coal dust has been an element in that explosion? A Very a big element. I think it has been the element.
- 18217 Mr. Wade: I notice that Mr. Bruce Smith used the word "explosion."
- 18218 Mr. Jones: I understand from the witness that he did mean, whatever was the primary cause of the trouble, supposing that it was a fall, that it was followed by an explosion of coal dust. As I understand, based on answer to a question of mine, that the force could not have come from that initial outbreak, and here due the damage it caused without being exploded.
- 18219 The Witness: It is a speculation as to what was the primary point of the outbreak. Directly that blast left its column, it went along other roads and from its intensity. You have the initial force, and, if other freon was on the road, the outbreak produced additional force.
- 18220 Mr. Jones: You do take it for granted that these could have been following on the original outbreak, as the result of the fall, an explosion or explosion of coal dust—the coal dust in the air being accounted for by the wind caused by the explosion and the heat by the compression of air as it moved? A That is a theory.
- 18221 Mr. Bruce Smith: Q Your theory is that the wind from the fall raised the dust, and that the force from the explosion subsequently may have been greater than the initial force? A I said that there is evidence of that.
- 18222 Q You see evidence of a greater force than could be produced by the outbreak of the air? A No.
- 18223 Q Did you and my that on some line was best, and that you are more for a than you calculated? A I think I said more or less.
- 18224 Q You consider that the force which came out was sufficient to bend the roof? A I did not say that.
- 18225 Q Then you do not consider that the force was lost by the force which came out of the gulf? A I do not say that.
- 18226 Q There was the cause of the roof break? A You get an initial action of coal dust, and that breaks up like a wave and pushes up the dust in the air. It is very obvious as it travels along.
- 18227 Q You formed the opinion that the roof was bent by subsequent forces and not by the initial one? A Yes.
- 18228 Q Do you think that we only came out from it, and that a subsequent explosion of coal dust produced the force? A No, I do not. I do not say that.
- 18229 Q Do you doubt that coal dust explosion creates flame? A I say less. I do not doubt it, although I have no evidence.
- 18230 Q As to the flame in the 87 level. You are not prepared to say that there was no flame at that level? A Yes, want to bend me down to something.
- 18231 Q Will you undertake to me that there was no flame in connection with the fire in No. 87 level? A No, I think there was no flame.

[The further examination of the witness was then adjourned.]

- 18232 Mr. Bruce Smith handed in to the Commission a "Short History of the Mount Kisco Cokery," by Mr. A. A. Allen, Chief Inspector of Coal Mines, and it was marked Exhibit A-20.
- 18233 Mr. Bruce Smith handed in the Commission for their information a printed report of the Court of Inquiry in connection with the Newcastle Coal Mining Company's "A" Pit. Also a report by Mr. G. G. Mair on inquiries into the working of the Newcastle Cokery Company's "A" Pit.

[The Commission at 4:25 p.m., adjourned until 10 a.m. the following day.]



TUESDAY, 21 FEBRUARY, 1900, 10 a.m.

[The Commission met at the Supreme Court, King's Bench, Sydney.]

Present:—

C. E. R. MURRAY, Esq., D.C.J. (President).

D. A. W. ROBERTSON, Esq., Commissioner.

R. RITCHIE, Esq., Commissioner.

Mr Bruce Smith, Treasurer at Law, instructed by Mr Ward, Crown Solicitor General, appeared on behalf of the Crown.

Mr A. A. Atkinson, Chief Inspector of Coal-mines, assisted Mr Bruce Smith.

Mr A. A. Knight, Solicitor, appeared on behalf of—

(a) the representatives of deceased miners, whosoever, &amp;c., (vicarious of the explosion);

(b) the employees of the Mount Kosciusko Colliery (miners, whosoever, &amp;c.); and

(c) the Australian Colliery Employers' Association (the Northern Mines Union).

Mr C. G. Wade, Barrister at Law, instructed by Mr F. Carter, appeared on behalf of the Mount Kosciusko Coal and Oil Company (Proprietors of Mount Kosciusko Mine).

(Mr J. Gifford, Secretary to the Commission, was present to take shorthand notes of the evidence and proceedings.)

19334. Mr Bruce Smith [I think there was a request made by a member of the Commission that the Company should supply six of these photographs with the translation of the notes shown on it.]  
 19335. Mr Wade [I said not two hours ago when the Commission asked for it, I only found Mr Bruce Smith ask for it. It can easily be got.]  
 19336. Mr Wade [Mr Carter, if you will kindly communicate with your clients, pull up you will find it ready. I hope you will, and it will then come up at once.]

Mr A. E. O. SELLERS, previously sworn, was further examined as under:—

Examination by Mr Bruce Smith (continued).—

19337. Q. Was theory which you have propounded to the Commission, with regard to this explosion, is of a character that might take place in the mine without any men being in the mine at all? A. Yes.

19338. Q. I mean the mine could have been absolutely empty and still? A. Absolutely able.

19339. Q. You know the literature of and mining and so with as anybody, I suppose? A. In a certain degree.

19340. Q. Can you tell the Commission of any single instance in which anything of the kind has taken place in a mine in which there were no workmen? A. No, I do not think I can.

19341. Q. I mean such a thing as you have described? A. No, I do not think I can.

19342. Q. You know something of the British Hill disaster, do you not? A. There was a disaster at British Hill.

19343. Q. Do you know anything about that? A. Not very particularly, but, generally, there was a great rush of wind, I understand, due to a fall, and the men were broken over.

19344. Q. To which do you attach most importance in accounting this great force—the height from which the wind fell or the men over which it fell? A. The both collectively. I do not think that I can exactly discriminate finally. The two are necessary to that sort of calamities—a certain height and a certain area.

19345. Q. What height do you think was necessary? A. Of course, as I said before, the calculation is speculative. I assumed a height of 4 feet 6 inches for the fall.

19346. Q. That was 4 feet 6 inches total height of 7 feet before the first fall, because, you know, the evidence is that it was 3 feet 6 inches or 4 feet? A. Yes, you understand, your calculation was wrong from my evidence. I assumed that what had fallen fell 4 feet 6 inches.

19347. Q. Suppose the evidence was, and you were satisfied that it was correct, that the first fall out of the total fall of 7 feet 6 inches or 8 feet was 2 feet 6 inches, leaving a maximum balance of 5 feet 6 inches, and perhaps only 3 feet, would your confidence in the case? A. I think the hypothesis that one you drew would not follow as a natural sequence to your hypothesis.

19348. Q. You mean to say that if the height I had mentioned had been the real height, you would not have the same conclusion as it? A. Not exactly then.

19349. Q. I want you to take another hypothetical case? A. Allow me. I understood you to say that the 2 feet 6 inches fell first.

19350. Q. I want you to suppose that, and that it left a balance of 5 feet or 2 feet 6 inches? A. It would still have that height. It would still have 4 feet 6 inches to fall.

19351. Q. That depends on your hypothesis? A. But if you get a fall, whether it succeed or a third fall, it would fall 4 feet 6 inches.

19352. Q. Does not the case you have put in the Commission assume that you have a perfectly flat bottom, and you have a flat roof 4 feet 6 inches high, and then a solid block of the coal comes down into that condition? A. Yes.

19353. Q. That is your hypothesis? A. Yes.

19354. Q. Suppose, instead of that, that this 2 1/2 or 3 inches had fallen roughly and irregularly, as is your hypothesis?

19355. (Mr Atkinson.) Perhaps what the witness wishes to explain is this: that the height of the fall is only reduced by the expansion of the falling matter, if you take from the roof and add to the bottom, and there is no expansion, you will get inside the same interval between the roof and the floor, and that would go on for ever. If it follows, however, the mass expands by breaking up, then of course it keeps reducing and reducing. This is how, I understood, three times roughly else.



19504. Mr. Bruce Smith | I want to see what this hypothesis is. I am asking him now to take it to be known to take place.

19505. Mr. Henson | I think the calculation which you are making in your mind will have reduced the amount of the fall due to the fact of there having been a first fall, say by 2 feet 6 inches or 3 feet, but by 6 inches, which, I think, you were taking in your mind as the least possibility of what we may call the expansion.

19506. Mr. Bruce Smith | Q. What is your experience generally as to the space which a fall of 2 feet 6 inches out of a roof would occupy after it reached the floor? A. That depends entirely upon the character of the roof.

19507. Q. I am asking you to take into consideration the character of that roof? A. I should say it would be pretty massive.

19508. Q. Do you mean to say it would occupy no more space if had fallen than before? A. Very slightly more.

19509. Q. What would you say—would it occupy 1 foot? A. About 3 feet.

19510. Q. Then, if the total height originally had been 8 feet, it would leave 5 feet 6 inches to fall? A. Yes, something like that.

19511. Q. And your hypothesis is a fall of 4 feet? A. 1 foot 6 inches.

19512. Q. And you have assumed that it came down, as I say, in a solid body all over? Yes.

19513. Q. You say you do not know much about the Broken Hill fall? A. No, only what I have read, some considerable time ago.

19514. Q. You cannot tell me of any case yourself in which the circumstances you have put took place? A. Not personally.

19515. Q. Take the Broken Hill case—you may assume that the fall was 30 feet or 40 feet, over an area of 1 inch, 40 ft. x 40 ft. A. That is the horizontal space?

19516. Q. Yes, literally 40 ft. x 40 ft. and a fall of from 30 feet to 40 feet, would you expect that to produce the same result as this did in a greater or less degree? A. Well, I should expect, if the conditions were— [interposed]

19517. Q. Would you expect it to produce the same result in a greater or less degree? A. That would depend upon the conditions of the two cases.

19518. Q. Supposing it had fallen the same as you suppose it to be here? A. I cannot suppose, because I do not know the conditions of the roof.

19519. Q. But you can, as a hypothesis. That is the best way for this fall, to produce the result, to fall in a solid mass—supposing it fell 30 feet in 40 feet over an area 40 ft. x 40 ft., would you expect it to produce a similar result, quite apart from coal dust, a similar result in a lesser or greater degree? A. I should expect, by reason of that having fallen from a greater height, that the force of the wind from that would be greater—think would be estimating roughly the area from which it fell.

19520. Q. Would you expect it to produce the same result, as far as the air pressure is concerned, as a lesser or greater degree? A. The air pressure would be greater.

19521. Q. Would you expect it to produce the same result as far as the force of the air was concerned? A. I do not believe that.

19522. Q. As regards heat? A. No, I do not think so, but there is an element missing in the Broken Hill fall.

19523. Q. I am asking you to leave out coal dust altogether.

19524. Mr. Henson | There is one datum you have not given. I do not know whether it is given in the report. That is the outlet.

19525. Mr. Johnson | Is there any evidence in that report about the area of the outlet of Broken Hill? I take it that it would be very much smaller than this one. There are no twelve by seven in available cases now.

19526. Mr. Webb | No, but I think in these stages you have openings 60 feet wide.

19527. Mr. Johnson | Most of them are once in a while.

19528. Mr. Bruce Smith | Q. Would you expect, from that area and that fall, to get a greater force than you have got here? A. Yes.

19529. Q. You attribute the ignition of the coal dust to the great heat which was produced by this force? A. Yes, by the force being restricted through that narrow outlet.

19530. Q. And through the great force that reacted? A. The force reacted the heat.

19531. Q. You attribute the ignition of coal dust to the great force that was produced by this fall? A. No.

19532. Mr. Henson | To the compression of air.

19533. Mr. Bruce Smith | Q. Instead of "force" say "pressure" if you like? A. Yes.

19534. Q. You say that the heat which ultimately ignited the coal dust was the result of this pressure? A. That is so.

19535. Q. And, if the pressure were greater in Broken Hill, that also would produce this great heat? A. Not necessarily.

19536. Q. Why not? If it is a greater force why should not it produce a greater heat?

19537. Mr. Henson pointed out that there was apparently not much set in continuing this conversation, as the data in both the cases which Mr. Bruce Smith was comparing were so very uncertain, and no datum was produced as to the size of the outlet in the case of the accident at Broken Hill.

19538. Mr. Bruce Smith said that the witness had come here with his mind absolutely free and open with regard to expansion on this subject, and had, previously, a theory as to the ignition of coal dust. Mr. Bruce Smith was putting to the witness hypothetically a case in which a greater amount of force or pressure was supposed to have been produced, and he proposed to see if the expansion at Broken Hill would not affect the conditions in which the witness had come. He, Mr. Bruce Smith, proposed to produce evidence as to the size of the outlet later on.

19539. Mr. Henson | It is known whether the accident at Broken Hill was a fall of the country rock or of the beds?

19540. Mr. Webb | I understood it was a subsidence of part of the roofrock that was packed in square sets. I would not like to say so definitely; but I think it was a subsidence, a sliding down, not a collapse of the roof.



It is now—A. E. G. Edition, 24 February, 1905.

19041. Mr. Bruce Smith. Q The ball in Broken Hill was 40 lb. a 50 ft. in diam. with a weight of 30 lb. or 40 lb., and it produced a great rush or outburst of air which banged men against the other side and killed some of them. Would not you expect that to produce heat which would have the effect of burning anything inflammable with which it came in contact?

19042. Mr. Bruce Smith. A I take objection to that, unless Mr. Bruce Smith will define what he means by "ball."

19043. Mr. Bruce Smith. Q I am talking of a ball similar to the one which you are answering in this case under similar conditions. A I cannot say that, because the conditions were quite different. At Broken Hill there was no coal dust.

19044. Q Have not I asked you to exclude coal dust from your consideration? A Not I cannot exclude coal dust.

19045. Q Have not you told the Commission that sufficient heat was produced before ever the accident was ignited? A I do not think so.

19046. Mr. Bruce Smith. That is the whole thing.

19047. Mr. Bruce Smith. Q The heat which first began the accident was sufficient heat, I understand you to say, to ignite the coal dust? A Yes, at the surface of discharge.

19048. Q What Mr. Bruce is asking you to do is to compare the effect of three two feet at Broken Hill and at Mount Kembla in relation to the production of that amount of heat, which would be 370 degrees?

19049. Mr. Bruce Smith. Yes, that is it.

19050. Mr. Bruce Smith. Q Of course, if you have not accident, you must go only into the question of the production of heat; temperature, as Mr. Baines does, that 370 degrees is sufficient to cause the combustion of coal dust. Whether it is or is not sufficient is another question.

19051. Mr. Bruce Smith. What he told us is that that air was driven out from that point at such a rate as to ignite the coal dust.

19052. Mr. Bruce Smith. Q On either at such a temperature. I understand Mr. Baines to say that the compression of the air by the fall raised the temperature of the air which it drove out to such a high point that, when it was driven out, it was hot enough to start the combustion of finely divided coal dust. I quite confirm, with you, that I thought at first that Mr. Baines said that the rate at which the air was driven out caused the air to be compressed, and that that compression evolved heat enough to ignite coal dust, but I understood that to be rather mistaken, because the primary compression must have been the compression due to the fall of the coal.

19053. Mr. Bruce Smith. Q I am not concerned now with the calculation of the chemical question of the actual production of the heat, but what I want to get from you is whether you believe that this fall produced such an alteration in the atmosphere as to ignite coal dust? A That is so.

19054. Q Without the action of any other body? A Yes.

19055. Q That is the initial cause of the explosion, air pressure?

19056. Mr. Bruce Smith. More properly called air compression.

19057. A Let me explain myself. When this fall came down at the point there was air driven out, and with it the debris and rock, which was whirled out from underneath the fall.

19058. Mr. Bruce Smith. Q What do you mean by debris? A Coal dust. It was inflammable. Now you understand me.

19059. Q Of course. What I want to get from you is the simple proposition which you have propounded that, with no other element than air, the coal dust which is in the air, is ignited? A Yes.

19060. Q And then the coal dust went on, and continued the explosion? A Certainly.

19061. Q Coal dust, I suppose, in any form of inflammable matter that may come in contact with air under the pressure—suppose a man's hair came in contact with it, what would you expect to take place?

19062. A I have not thought that out.

19063. Q Well you think it not sure? A Coal dust is highly inflammable, it is all carbonaceous matter, containing carbon and volatile gases.

19064. Q Supposing men's clothes had come in contact with this great heat that you suppose was produced, without any coal dust at all, do you think they would have been burnt? A I should imagine they would have shown some signs of it.

19065. Q You would expect these hairs to be burnt? A I would not say that.

19066. Q When others would you expect to find upon a man's hair and skin about that great heat, in the absence of coal dust? A I really have not thought that out.

19067. Q Think it not sure? A There would be some loss, I should imagine.

19068. Q But what do you think would be the effect upon hair or skin? A I am really not competent to answer.

19069. Q You cannot think it certain the speed? A No.

19070. Q Suppose you had to think it out—suppose you had a day to think it out, what would you do? A I would try to get some data of the effect of temperatures on skin, and a lot of things like that.

19071. Q Supposing your theory to be correct, that the sort of thing may take place in a mine without the presence of any gas at all, what proposal have you to offer the Commission to prevent a recurrence? A The only thing I can suggest would be to have the shaft arranged with a moderate air supply, so that the air would not be confined to one drift of workings.

19072. Is that the proposed suggestion which you have to make to the Commission? A That is all I can think of for the moment.

19073. Q You admitted previously that, since the coal dust was ignited, it is quite possible that the whole of that part of the mine was, at some time or other, subject to flame? A Yes, in the way that we were talking of a yesterday afternoon.

19074. Q I mean to say that that is one of the conclusions you come to, that, after once the coal dust had been ignited, and had exploded, there passed over many parts of that portion of the mine? A Yes, in isolated parts of the mine. It may not have been all over, but it may have been in parts. I dare say.

19075. Q And you do not pretend to distinguish now between the things which were subjected to the actual flame of the coal dust and those which were subjected to the great heat of the air only without the coal dust? A No, I cannot distinguish.

19076. Q And therefore you have no hesitation in suggesting that those things which were burnt in the way you describe were burnt by flame? A As I described that to you previously.

19077. Q Burnt by flame? A On great heat, as I said yesterday.

19078.



19039 Q Did you consent to tell which You submit there was done there passing over that part of the area? A Yes

19040 Mr. Wade I have got a plan, addressed in Your House, which Mr. Cartwright has just brought in It shows the entrance of the mine and that is the one, I suppose, which You House has asked for

19041 Mr. Adams said it would be necessary to call someone to prove the plan

19042 Mr. Adams said Mr. Cartwright said that, to their knowledge, the plan appeared to be accurate

19043 Mr. Wade said he would call Mr. Cartwright, the newspaper who had prepared the plan, to answer

19044 Mr. Bruce Smith Q I want to ask you about two stoppings Did you take any notes of the different evidences of facts that you saw at the mine where you discussed it? A Yes

19045 Q Have you three notes here? A I have some of them, and the others I have lost

19046 Q Will you turn up those, if you have them, which record what you saw with regard to those two stoppings edge of No 5 Right? A I have no note of those at all

19047 Q Will you summarize some you necessarily with regard to that? A No, I have been trying to bring my memory to bear on those stoppings but I cannot say definitely

19048 Q Can you say whether the faces at those places was from the intake to the return or from the return to the intake? A My impression about the faces at that position were that the faces were towards the intake in the right, that's to the east, and the other way to the left, or the west

19049 Q You have no note about those stoppings you cannot express an opinion upon that? A Yes

19050 Mr. Bruce Smith The stoppings are shown on this plan (Ex. 39) as being driven in the opposite direction to that given in Mr. Adams's evidence—Mr. Adams's evidence is that they were driven from the back leading to the intake This plan shows them as being driven the other way

19051 Mr. Cartwright Perhaps Your House would allow us to examine after the members of the Commission I have not quite finished reading over Mr. Miller's evidence; and you see the disadvantage that I would be under

19052 Mr. Adams Very well

Re-examination by Mr. Robertson—

19053 Q I think you have described the conflict of the entrance to the 4th Right, that is from the back leading to the intake, as being wet and damp? A Yes, I remember that entirely the last time

19054 Q With water dripping from the roof? A Yes

19055 Q Now, did you go up to the fall? A Went to the edge of the fall

19056 Q Did you notice near to the edge of the fall a space of about five yards square on the side of the road, did you notice a check? A There was a check partly damaged, I remember that

19057 Q Did you notice some props standing up in the check? A I do not remember particularly that, I remember some props lying with their ends loose, and some stuck at the bottom

19058 Q That is what I am referring to The props I am referring to were props that were half buried in check, with their tops against the wall? A No, I do not remember that

19059 Q Anyway, you noticed the check damaged? A Yes

19060 Q Did you notice the direction of the flow? A Well, it appeared to me, taking all the evidence I saw, that it came out

19061 Q That is very strange to me, because a number of people were there when I was there a few days afterwards, and we all came to the conclusion that that check was down in Now, if there were half a dozen props standing up half way up to the check, with their top ends leaning towards the water, what conclusion would you draw from that? A, I should imagine it would be the opposite way, the flow, is that way The force would be the way that the tops of the props pointed

19062 Q The force would be in towards the mine? A Yes

19063 Q Did you notice the character of the fall did it consist of very large pieces or of ordinary sized stones? A Of fairly large stones, it struck me

19064 Q Was there anything different from any other fall? A Most falls I have seen are much the same And then, I take into account the nature of the roof which I had seen before as the heaviest evidence of those transmitted by slides

19065 What I want to know within from your recollection of that fall, can you say if it differed in any material respect from any other fall? A The stones were a bit bigger, I think, Mr. Robertson

19066 Q Do you think the blocks were as large as that fall as occurred when the 5th took place? A Larger than that

19067 Q Did you go up on the top of the fall? A No, only to the edge of it

19068 Q Did you not try to get up, to test for gas? A I climbed up on the edge; to look for it that way

19069 Q How far did you get up? A Perhaps a yard high, or something like that I could not tell you from memory

19070 Q I myself got up fairly far or 9 feet Is it not a fact that along the edge of every fall there is usually a space which you can wriggle up? A Yes, that is so

19071 Q Did you see where the edge of the fall and round about that check a lot of small coal and dust? A No, I cannot remember that

19072 Q Did you see a lot of small coal? A There was a lot of small coal close to the fall I remember that

19073 Q Now there was no dust, because it was all damp? A Yes, it was damp It was dripping the last day I saw it, but the first day I saw it it was not damp, I think It was fairly dry in there the last day I saw it I introduced a lot of that material in the condemnation

19074 Q Was it not slippy under the feet? A It was wet to the feet afterwards

19075 Q Now, we have it as evidence that there was a fall of 4 1/2 feet? A Yes

19076 Q And you believe that fall fell as a block more or less? A I think it would be more correct to say that it did not break up very much I told Mr. Bruce Smith that it might collapse 3 feet

19077 Q That would cover any dust, if there was any dust? A Yes, it would

19078 Q If the dust in this area, where the fall is said to have occurred, was stirred up, and the water was damp, another fall, occurring subsequently, would have no dust to operate on until it reached the main haulage road, would it? A I would not altogether like to say that; because, although the bottom of the road would be covered up, as you say, by the last fall, there would be dust or suspension in the atmosphere



Edison - L. E. O. Edison, 24 February, 1885

18659 Q. There could not be any dust or suspension in an atmosphere where working had been suspended for some weeks; what was to fill it up? There were no men working there. Would it not be a reasonably safe assumption that no dust could possibly be in suspension there? A. There would not be a great deal of dust.

18670 Q. Would there be any, if there was nobody there to stir it up? A. I would not like to say that.

18671 Q. But there was nobody there? A. But still you get dust in these places sometimes; it is light and fine; and the heating radiators are there, and all that sort of thing.

18672 Q. But there is nothing to conduct the air from the heating radiators into that place? A. Yes; but air is going past.

18673 Q. Yet from the heating radiators? A. But from the return.

18674 Q. But there was nothing to conduct the return air into the place. Or reflection, do you think it is reasonable to suppose there would be dust or suspension in the air in that part? A. I should not say there would be a lot of dust; but there would be some.

18675 Q. The place was damp, the shaft, or wherever was left there, would be covered up by the fall; where would the dust come from? [Edison did not answer.]

18676 Q. Then we may take it that there was no dust to speak of until the blast reached the main heating radiators? A. I cannot say that.

18677 Q. But you said the place was wet, damp, and water was dripping from the roof? A. Yes; but there could not be a heavy dust on the sides.

18678 Q. If the place was damp, slippy underneath, and water dripping from the roof, do you think it is probable that there would be any dust on the sides? A. You see it takes so little dust to cause a disaster, a very small quantity.

18679 Q. Assuming that there was no dust for this blast to operate on until it reached the main heating radiators; the air would, when you suppose was brought up to 250 degrees temperature by compression, reach the return area; there would be a sudden expansion and a very sudden drop in temperature; and I take it something very much less than 357 deg. per square inch would reduce the temperature sufficiently? A. Yes, but the things might be done before you reached the point of reduction.

18680 Q. Yes, but I cannot have it so fast? A. Well, of course, if you assume that there is no dust, the theory will not operate; you cannot apply the theory.

18681 Q. The experiments by Dr. Bidson were made with an air compressor? A. They were made in connection with the testing of air compressors.

18682 Q. And, of course, in such that temperature and that pressure, the air compressor would naturally have to work against a certain pressure? A. Not necessarily.

18683 Q. Do you think if that air compressor had been working against the atmosphere, that the men would have ever reached their temperature? A. But you could not have the pressure of the air compressor pressing against the atmosphere.

18684 Q. Quite so, that is what I say. If the air compressor pumped the air against the atmosphere, do you think that any velocity would ever bring the temperature up to 250 degrees? A. I think so. For instance, supposing the air compressor was releasing air at that pressure, at the point of discharge there would be that temperature.

18685 Q. But the air compressor cannot bring the temperature of the air up to 250 degrees unless there was a certain pressure? A. They put you your usual pressure in the air compressor, and that air compressor is discharging its air at that pressure in the atmosphere.

18686 Q. You will not get that temperature? A. At the point of discharge there would be that pressure.

18687 Q. If you started your air compressor against the atmosphere, how could you get that temperature? A. You do not follow me, and I do not follow you. Say you had your air compressed to that temperature and that pressure, and you opened a small cock in the end of your receiver, or exhausted and sent into the receiver, or say you had the receiver full at that pressure, and you opened the cock and applied the blast, then, if the temperature of that air is up to that height, you have the possibility of an explosion.

18688 Q. I take it that you are taking a parallel experiment, as it were; that is to say, the fall in the 250-psi point is the point, the space in the point is the cylinder, and the weight from the No. 4 light is the gas being away from the air compressor? A. Yes, that is it.

18689 Q. Well, if your air compressor is started, so is this cylinder, as in this fall, to pump against the atmosphere; now, how could you get the temperature? A. Because the pressure gives the temperature.

18690 Q. How was you going to get the pressure if you are pumping against the atmosphere? Because you are discharging a large volume of air through a small orifice.

18691 Q. Is that the fact? A. Yes, the friction of the air through that small orifice gives the pressure.

18692 Q. An air compressor, having got the power to drive it, works constantly of a cylinder with a tight-fitting piston? A. That is so.

18693 Q. And if that piston was not tight, but had, say, a space of  $\frac{1}{4}$  in. round about it, would you get any pressure at all? A. You might get a certain temperature without much pressure applied by the friction of the air being pushed in it; but instantly, there is such an arrangement, as you are aware, in a hydraulic press, where the water is allowed to pass through small orifices; and these orifices create the great power.

18694 Q. Could you get any pressure at all to speak of in an air compressor without the piston being tightly packed? A. You could not get much.

18695 Q. Supposing Dr. Bidson had made his experiments with a piston not tight, but with a  $\frac{1}{4}$  in. space about it, could he have got that temperature? A. I do not suppose he could.

18696 Q. Could he have got it with a space of  $\frac{1}{16}$  in. or such? A. He could not have got so much as he did.

18697 Q. Then to get this pressure in the air coming out of the No. 4 light, you must assume a tight piston? A. Not necessarily.

18698 Q. But you have already said that, in order to obtain a certain pressure, you must have a tight piston? A. We cannot be not quite parallel. You have a discharge there, but a certain portion comes through the shaft piston, and I assume a certain portion to come through there [referring to the allowance of 30 per cent of air which escaped around the fall].

18699 Q. You have already said that Dr. Bidson could not have succeeded in obtaining a pressure of 250 lb. per square inch with a slack piston? A. No.

18700.



19706. Q. Then, if that is so, how could you get that pressure with the ball with a dash piston? A. The piston which you are thinking about, and which I am thinking about, is comparatively small, and the diameter of the valve is comparatively big, but the ball is a larger counter-shrinker.

19707. Q. I do not think it is. Take  $\frac{1}{2}$  in. of a 26 in. piston and, ultimately, you will find that it is about the same diameter as a ball of steel about the circumference of the 26 in. square gash? A. No, it would be a lot less.

19708. Q. A quarter of an inch of a 26 inch size would be 1 1416, and the piston, the ball, which you assume is a piston, is 1 1218, so a ball of that would be 1-1218. Now, again, engineers, you know, and I would not say to you, that you cannot secure any pressure in a dash of water if you have a tight piston; the piston is made at least an mechanical science and practice can make it. A. But there you have an evidence where they have got a pressure by a ball, in the Boston Ball case.

19709. Q. There is no evidence at all about pressure in that case; we have evidence of a dash of air, but nobody has ever suggested for a moment that there was a pressure of 75 lb. or even 10 lb. per square inch? A. I do not think you understand me about the ball. You think that it is possible, if you have a ball, that there is a discharge of air.

19710. Q. Yes. A. Well, assume half of it goes out somewhere, and the rest comes down the discharge. That goes through a certain orifice of discharge, and, in getting through that orifice of discharge, there is friction all up, and it is the friction which sets up the loss.

19711. Q. Quite so, but what I want to show is the responsibility of getting this pressure when you piston is working dash—I feel that all rest about it. A. Supposing you had that cylinder which you speak of, and you moved your piston forward, you would get a discharge would you not?

19712. Q. Yes. A. You get a discharge with the ball just the same.

19713. Q. You do not get a pressure by the discharge of air by the piston of an air compressor unless it is tight? A. I do not see it.

19714. Q. Cannot you see that you cannot get any pressure in the air compressor if the piston is not quite tight? A. I do not think the conditions are parallel.

19715. Mr. Sellers: But you want to draw a parallel between the two; you want to say that this is an air compressor.

19716. W. W. F. That was not my theory in putting this evidence before the Court.

19717. Mr. Sellers: The whole is a you want to say, because it seems to me that you want to draw a parallel between the ball producing a certain pressure of air, and Dr. Robinson's experiments.

19718. Mr. W. F. I only used Dr. Robinson's experiments for one purpose, to show the ignition point of coal dust. Our argument has nothing whatever to do with the piston. Dr. Robinson's experiments, that piston worked slowly, perhaps it worked at the rate of a mile an hour, going forward; and the velocity was practically nothing. The evidence here is that the ball fell a certain depth, which gave a certain velocity, that ball, compressing the air out of the space, gives a certain velocity of some hundreds of miles an hour, and with that velocity you get the pressure.

19719. Mr. Robinson: But you cannot get compression with a ball nor with velocity unless the piston is tight.

19720. Mr. W. F. There is the fact that in Boston Ball, where it was not tight, there was an enormous velocity, which looks much better and takes the weight of your heads.

19721. Mr. Robinson: Yes, but it does not want 36 lb. per square inch nor 3 lb. per square inch, to knock men down and kill.

19722. Mr. W. F. That is so, but I only use that as one step in the argument. I say that the Boston Ball case shows that the velocity can be attained by the displacement of air, and there are cases, which the Commission knew of, where displacements of air by valves and pistons have not been off.

19723. Mr. W. F. You cannot get heat without compression, and very unnecessary compression of the gas too, because the latest heat made made by the compression gases all very quickly.

19724. Mr. Robinson: It seems to me that you want to throw off the last of the pressure, and stick to the velocity.

19725. Mr. W. F. We worked backwards. We had the evidence that a force had come out of the 4th High, which split at the main air vent, and came out by a vent valve, and which caused the ignition of coal dust. As there was no evidence of the presence of gas, how could that coal dust have been ignited? Professor Bodley's experiments show that coal dust will ignite at a temperature of 23 degrees. How could you arrive at that temperature? Well, you could get it in two ways. Professor Bodley puts it in his experiments with the air compressor under conditions entirely different from what happens in the mine. He got the pressure in an air cylinder by a piston working slowly, showing that, once working slowly, compressed air will, in time, give you the heat. But you can get that same result of pressure by, as it were, a piston working at an enormously increased velocity. I do not put it in as it is all that the temperature was developed in the mine by the continual accumulation of steady pressure by a piston at a slow rate, but by the velocity at which the air would travel from that small orifice. Supply the conditions, you can get that pressure, quite apart from Professor Bodley's experiments. Then, if you can get the velocity sufficiently high to reach a pressure of 36.7 lb. per square inch, you get the conditions which Professor Bodley says will set up the ignition of coal dust. Once you get the pressure of 36.7 lb. per square inch, it does not matter where you get it, then the ignition will result.

19726. Mr. Robinson: Yes, but I want Mr. Bodley to show me where that pressure can be obtained.

19727. Witness: Take an area 80 feet square, and filling it 1 foot 6 inches; the time occupied would be 5 of a second.

19728. Mr. Robinson: Q. You assume that? A. I don't see that.

19729. Q. But how can you get the velocity of 750 feet per hour by those conditions? A. You get that body of air displaced in 5 of a second.

19730. Q. Leave out 750 of a second? A. That is a mathematical fact. If that is not going to be sufficient—[The witness.]

19731. Q. But, even assuming the displacement is 5 of a second, and the ball is 4 ft. 6 in., you must allow for the piston, as it were, working in it. A. Half of a second goes into the gas.

19732. Q. Do not you allow for any of it going around the sides of the piston? A. That is what I allow. I allow one half of it for that.

19733. Q. Did you say it was 5 of a second? A. Yes.

19734. Q. That is a half of a second? A. Yes.



19700.—A. E. O. 5 Box, 14 February, 1900

19719 Q Do you not think that is a far fetched assumption, that a fall such as this would take place in half a second? J That is the time it would take by the laws of gravity

19720 Q A free falling body? J Yes

19721 Q Was this a free falling body? J Well, I was assuming so.

19722 Q Did you ever know, in your experience, of a fall occurring in the half of a second? J The ground would fall that distance in half a second

19723 Q A free falling body? J Yes.

19724 Q I ask you, again, in your experience as a practical Manager, did you ever know of an extensive fall occurring in the space of half a second? J Well, certainly, there is the landing of the rocks, and a meteorite falling, but considerably a great deal of distance a free falling body

19725 Q Would it not be rather the more to say that hardly any fall takes place under a space of time of ten or twenty seconds? J That is right enough, you get a fall, and then there is the debbling of the material above from the ground where it fell.

19726 And you think this space 2 chains square would fall that all over? J I had assumed that

19727 Q In half a second? J Yes

19728 A. E. O. 5 Box, 14 February, 1900. It is not our case that it did. Our case was then I worked backwards to the dividing point, the junction of the 4th Right with the landscape road, and I said, "If you had evidence of movement from here that point going up and outwards, and if the theory of gas in Marry's place will not account for it, then the theory of the explosion working back from Marry's place will not account for it, then something must have taken place between the junction of the 4th Right and the gas." If there was an explosion of gas it must have taken place there. The evidence will not support that theory. So we were driven back to the fall in the gas, which we knew took place at that time. Then we took that fact alone, that a fall 40 paces square did happen at that time, precisely in a solid body: that fell 4 ft. 6 in.

If there were the exact conditions that fall in itself could induce a velocity of air through the orifice of 700 miles an hour, and that, in itself, could give an air pressure through the orifice sufficient to create a temperature which would ignite and burn. We do not say that did take place, at all. It may have been that a larger area of roof fell. It may have fallen in an extraordinary condition, and under extraordinary circumstances. But all I say here is that, if we are called upon to account for the condition of forces in that 4th Right, if that fell did take place at the time of the explosion, if the roof did fall under certain conditions, then those conditions would give the velocity we have spoken of before. In the first place there is this conclusion that we have made is regard to it. We took 4 ft. 6 in. as the depth of the fall, and we only took 40 paces square in the area of the fall when it may have been more. It is just possible that the roof of the adjoining walls, where there had been a full side, may have fallen at the same time. All we say is that it is physically possible, according to the laws of physics, that you could get a speed of air of 700 miles an hour from that roof when this last case falls.

Then, without going any further than the volume has got itself, that would give the pressure sufficient to create a temperature that would ignite and burn. We do not say it did happen, it is only a theory put forward. It is only to show that, if it cannot be accounted for by gas, or by gas put out, as that point, then we put forward a theory based on these two conditions. We do not say it did happen, we only say it could have happened. Taking these two facts, these, in themselves, could give the results which we put forward.

19729 Mr. Moore. I might point out one error in the calculation, and that is the calculation of the time taken by the fall of the falling body depends upon the assumption that that body is falling in a vacuum. Now, in this case, the assumption is that that body, in falling, put upon the air underneath it an enormous pressure, and, in point of fact, that very pressure, put by the falling body upon the air beneath it, would accurately accord the rate of falling of that body, and, therefore, that velocity equals the whole mechanism with regard to the time taken for that body to fall. The very fact that the falling body is exerting this extraordinary pressure on the air and is driving out the air at this extraordinary rate will coincide with the conclusion that it fell at the assumed rate at which it might have fallen, if a ball falls in a vacuum. That conclusion is more correct in fact, apart from all sorts of other considerations, to make it exactly an accurate calculation.

19730 Mr. Anderson. Then, of the portion of the roof that fell were 10 ft. in thickness, that would be 10 ft. in the square, with it completely under a pressure of 35 ft. in the square inch.

19731 Mr. Moore. It would be used down. The two hypotheses, the hypothesis of the conclusion, and the hypothesis of the cause, will not work together.

19732 Mr. Anderson. It would not be unreasonable to say that it might take a second? J I should say that it might probably be the time I calculate.

19733 Q It would be so, if it were unreasonable to assume that the fall might even take two seconds? J I do not see why it should take two seconds.

19734 Q That is not very long? J But it does not take very long for a stone to fall a few feet.

19735 Mr. Moore. I might say quickly three minutes to five minutes, and if there is nothing to stop them there is nothing to be surprised, and if there is nothing to be surprised there is no pressure of air at the orifice.

19736 Mr. Anderson. It might take a second, if it takes a second this pressure and this velocity could not be got? J Any pressure would be reduced proportionately to the pressure in the time.

19737 Q If it took a second the pressure would be reduced by one half? J Yes.

19738 Q And the temperature would be reduced to what? J Not quite mathematically half.

19739 Q Well would it be, say, roughly? J I would not like to say that. The temperature is not exactly in proportion to the pressure. It would be reduced roughly.

19740 Q Would it be reduced to one half?

19741 Mr. Moore. The whole, I presume you have not submitted this hypothesis to a real expert, like Professor Whewell, have you?

19742 Mr. Anderson. No. The question is this, that, on the one hand, Mr. Atkinson has to adopt a hypothesis which there is no evidence at all to support — (interrupted)

19743 Mr. Moore. In his address, you think, adopts a foolish hypothesis, we can only say that that does not satisfy you in adopting a still more foolish one.

19744 Mr. Anderson. I do not say that Mr. Atkinson's hypothesis is foolish. I would not be so disrespectful to him, nor to the Court. We say there is a theory put forward to account for it, and, having traced the evidence of the force, if the theory of a gas explosion fails, we put forward another theory to account for it.

19745



18750. *Mr. Howe* | You assume as part of your negative theory that if you do light a body of inflammable gas at its left explosive edge, where it is near Alford, you will get a reduction of explosive force from its actual center.

18751. *Mr. Wade* | There again Your Honor asks me to assume a thing of which, so far as I know, there has been no proof in the past.

18752. *Mr. Howe* | I think the Commissioners are all agreed, as a point of fact, that you do get, under those circumstances, a reduction of force from very nearly the southeastern margin of that body of explosive gas, and not from its edge, and, if Morrison's light did light that gas from its left inflammable edge, where it was undiluted, there is nothing in that fact inconsistent with the fact that the final explosion took place in the center of that body of gas, which would be, from the theory of its having been exploded from the 4th Right, very near the opening of the 4th Right at the time of the explosion, and the possibility of that you dispute.

18753. *Mr. Wade* | Yes. All sides admit, this, that these shrapnels were apparently blown out at a very early stage, and there was none of them coming up the traveling road. That is shown by the evidence of the buildings of that date just east of the 4th Right in the traveling road, and there is no evidence at all of any explosion near or above having traveled up the traveling road, or down it. The lay Hunsman was in the traveling road near the 5th Right, and all he got was dust, and no flame at all. All the Commissioners think that this body of gas would tail out from the 4th Right to Morrison's light, there must have been an enormous configuration—there would be, no word for it—the wave would be almost half of some miles from those circumstances.

18754. *Mr. Edwards* | Not necessarily.

18755. *Mr. Wade* | He Hunsman put in this way that, if the actual point of the explosion was Morrison's light, where the air would contain the first properties of explosion, the pressure would go back to the point where the center of the body of gas was, I understand, and would radiate from that point, and that might account for the radiating going large and smaller from the 4th Right. If that is so, then we have a body of gas at least 200 yards long.

18756. *Mr. Edwards* | No, you only have 1 or 2 per cent, with dust. You have not to consider that it would be pure gas.

18757. *Mr. Wade* | If it were pure gas, there would be no explosion probably.

18758. *Mr. Edwards* | You only want 2 per cent.

18759. *Mr. Wade* | Two per cent, in every group exactly. If there were 1 per cent, at Morrison's light, and going back to the junction of the 5th Right with the main bridge road, it would give an enormous volume of explosive material. If there is 2 per cent, at Morrison's light, and no more than 2 per cent, at the 4th Right, it will give the same explosion at the 4th Right. You have that large body of gas, and it is mixed up with dust, and what you would expect from that under ordinary conditions would be a disposition of radiated dust, throughout the length and breadth of the wave, probably. If there were this enormous body of dust from the 4th Left to the 5th Right, it would immediately catch the 4th Left traveling road, or bridge road, which was a dusty road, and we would find it traveling right through the shaft tunnel, but the only evidence of the effect of heat or flame to the left of the 4th Left was in the structure of the skin of that ray, Kenneth Stedden. He is the only one who had any indication of heat upon him who was to the left of the 4th Left traveling road. I am not speaking now of Aches and Moore, who were in the Barn, who were said to have been asphyxiated.

18760. *Mr. Edwards* | I certainly saw some myself up on Stafford's Walk.

18761. *Mr. Wade* | I am only speaking of the evidence. The only persons referred to from that is heat as having been under the influence of flame or heat were Aches and son, Moore and son, and Percell, who were working in the faces of No. 1, and Kenneth Stedden. They were all I know of.

18762. *Mr. Edwards* | You have not given the temperature? A. 54 degrees.

18763. Q That is to say, if the pressure were only cut to 1/2, the temperature would be only 54 degrees? A. Yes.

18764. Q Of course, it is not necessary to say that a temperature of 54 degrees would not ignite dust? A. That would be the measure of temperature.

18765. Q And that is the measure of temperature of the shrapnels, say 58 degrees? A. No, that is wrong. The total increase would be 34 degrees.

18766. Q And what would be the total temperature? A. Ninety-four degrees right (94) degrees.

18767. Q Then, if the time factor was a second, and not half a second, the temperature would be only 94 degrees? A. Yes.

18768. Q Even if it were three quarters of a second only, still the temperature would be far below the ignition point of dust? A. Yes, that is so.

18769. Q So that, if we assume three quarters of a second for the period of time of the fall, it is impossible to reach the ignition point of real dust? A. That is so. That has only been put forward as a hypothesis to account for the reduction of force from the 4th Right forward, sideways and backward.

18770. Q Yes, but we only want to see whether the premises are reasonable. You have had a considerable experience of the working of pillars at the Metropolitan Colliery? and I dare say you have seen large masses hanging there, quite as large as this fall in question? A. Yes.

18771. Q Did you ever hear of any trouble by fall? A. No nothing to speak of.

18772. Q And pillar working is carried on very extensively there, is it not? A. That is so; but the conditions are hardly parallel, because in the Metropolitan you are hanging a lot of slack in to support the roof when it does fall. You have your gobs in your pillar workings.

18773. Q Well, it is not packed up, and you can always look for an average fall of at least 5 feet? A. I would not say that—I should say less than that.

18774. Q At all events, pillar workings are carried on very extensively there, and larger areas than 45 yards square, the area of this supposed fall, are frequently hanging? A. That is so.

18775. Q And in all these years there has never been any trouble? A. That is right. Then, you see, the conditions are not parallel, inasmuch as your roof falls upon the shaft, and the distance is, less.

18776. Q You assume 4 feet 6 inches, and there must be at least 4 feet 6 inches of an average fall at the Metropolitan Colliery, with all the slack in? A. Suppose you had that area hanging, it would not fall 4 feet 6 inches in the Metropolitan, because it would fall upon the shaft that is so between your two roads.

18776.



Witness—A. K. G. Bell, 26 February, 1900.

19752 Q But there are many cases where there is very little slack in the lead? A. In those cases it would be right.

19753 Q But do not you think that, considering the extent to which paper operations are carried on there, and the frequency with which the reef is heaving up after the tides have been withdrawn, if such an occurrence were taking at 700 miles per hour from a distance were possible at Krimia, it is also possible at the Meteorological Observatory? A. But I think you mistake altogether the trend of my evidence. I mentioned that at a hypothetical case, as what might have been—I do not say it did occur. I do not say that the conditions were exactly as I have assumed there, but the result of the conditions I then assume would be the result which I approximate there. That was a hypothesis which would explain an opinion which I could not explain in any other way.

Examination by Mr. Elphinstone.

19754 Q Have you made any calculations of the velocity of the expelled air issued by a fall 5 feet 6 inches in a thickness of 1? A. No.

19755 Q Over the same area that you have been dealing with, where this subsequent fall occurred? A. That would be much less, because the thickness would be shorter.

19756 Mr. Elphinstone: Q How is that? A. No, the time would be longer, would it not, relatively to the area. No, the time factor would be shorter.

19757 Mr. Elphinstone: Q How do you arrive at that conclusion? A. By considering the laws of gravity.

19758 Q Do you want to say that it is faster to fall? A. I thought you meant 5 feet 6 inches of a fall.

19759 Q The thickness of the strata falling would be 5 feet 6 inches? A. It would make no difference in my calculations, because the distance it fell would be the same, and it would occupy the same time.

19760 Q Would the same quantity of air be expelled by a fall 5 feet 6 inches coming down in one solid body as a fall 5 feet 6 inches? A. The displacement would be the same.

19761 Q Would you expect the same result if the air had come through the strata solid? A. I do not say so—when I am speaking, you would.

19762 Mr. Elphinstone: I am sorry Mr. Bell has got a wrong impression of what Mr. Bell means.

19763 Mr. Elphinstone: I am trying to get Mr. Bell's attention as to the first fall. I am asking him to assume that the first fall covered the same area as the second fall, which is said to have caused the disaster.

19764 Witness: So that once you give the distance is only 5 feet 6 inches, and the time of fall would be less.

19765 Mr. Elphinstone: Q The distance of the fall is the same; it would be greater, in fact, because you yourself have said it takes for expansion of the fall? A. Well, you are the distance.

19766 Q The fall would have somewhere about 5 feet in fall? A. The amount of displacement would be greater if it had to fall 5 feet.

19767 Q Would you expect that the result would be the same, or greater, from the point of view of the destruction caused? A. Mathematically, it would be greater.

19768 Q Are not you surprised to know that a fall 5 feet 6 inches did take place over that area, and did no harm whatever? A. I am not in a position to dispute it, although I have only heard it in Court. I accept that.

19769 Q If the evidence was so, that a fall of 5 feet 6 inches took place over that area, and did do harm, would you be surprised? A. No.

19770 Mr. Elphinstone: The evidence does not show how it fell. If you assume it fell in one solid piece—[interrupted].

19771 Mr. Elphinstone: I am asking how evidence do that. He says that, from his own observation, he thinks it would fall solid.

19772 Q Would you say that, Mr. Bell? A. It is left to him.

19773 Q You assume that it has fallen solidly there? A. Yes, I expect it has broken apart, and I am dealing with that sort of conditions.

19774 Q Now, I am taking five fall of 5 feet 6 inches in the same way that you say you expect it would fall; would you be surprised to hear that that fall did take place and caused no harm? A. I would not be surprised, because we have facts in the pit regularly.

19775 Q Now you compared at the mouth of the second one? A. I only put that case hypothetically. I assume that a certain area did fall a certain distance in a certain time. If it did so, it would give a certain temperature, which Professor Deane says would ignite coal-dust. If you destroy those premises altogether there is no hypothesis.

19776 Q If this 5 feet 6 inches of a fall did take place, you, in your evidence now, state that it would cause a greater displacement? A. I do not quite follow you altogether. You say it fell from the same height?

19777 Q Or a greater length? A. Then you would have a greater displacement.

19778 Q Then I suppose you would admit that the first fall after the pillars had been extracted would have a great deal more dust to operate on than the second fall? A. Yes, probably.

19779 Q You also admit that, if there were no there, it would have the pit to operate on? A. Yes; if there was gas there.

19780 Q Are you now surprised to hear that no harm was done by that first fall, in view of your hypothesis? A. No, I am not surprised at all; because my case is pure hypothesis.

19781 Q You still hold the opinion that a fall of 5 feet 6 inches could take place, having 5 feet of space in it through, having dust to operate on, having any other means gas that might be there to operate on, and it would do so possible harm wherever, and, independent of that, another fall might take place, having its space to fall through, and it would do all the harm here? A. I cannot answer that question. You put one at a time. You are assuming two cases for which there is no parallel. It is a bit confusing.

19782 I have asked you, and you have answered me, that the first fall would cause the greater displacement of air? A. Yes, mathematically speaking.

19783 Q And I have put it to you that the evidence goes to prove that no damage was done by that first displacement of air? A. Yes, that is right.

19784 Q Now, I ask you what additional reason have you got for supposing that the second fall, which would have a less space to fall through—or, in other words, would cause a less displacement of air—would cause the damage you speak of? A. I have no reason whatever.

19785 Q And in it quite consistent with your theory that the second fall would do this damage, but the first fall did none? A. It is consistent with my theory that either fall would do the damage. 19786.







Witness—A. E. O. Fisher, 24 February, 1933.

15547 Q Would not you keep men standing in this place, regularly, in order to report when it was likely to fall? A It might have been a waste to send the men in there. Presuming the place was safe, I should certainly say I would have it removed.

15548 Q Have you put before the Commission the idea that the roof suddenly falls without any warning? A When it is falling.

15549 Q How do you see such roof falling? A I have seen it falling.

15550 Q How do you see actually there? A I have been pretty close to it.

15551 Q And you actually put it before the Commission that a large body of roof like this might fall without any warning at all? A I do not put it that way. Of course, if you draw the timber out of the roof, you naturally anticipate a fall, and then you come to a certain stage when you have to take certain precautions, but if the roof is supported you do not need to take these precautions.

15552 Q I am putting the case before you where you have drawn the timber, and you expect to see it fall? A You go and see whether it has fallen.

15553 Q If you had a good viewing, your idea of management now is that you would withdraw the men until it had fallen? A Yes, if the conditions were where one might anticipate a similar result [removing the Mount Krebbs diagram]. That would only depend on one's judgment, it would depend on the conditions surrounding the case, if they were similar.

15554 Q I am going to take your own evidence to deal with the conditions. You said that in your opinion Mount Krebbs was one of the oldest mines in the Colony? A Yes.

15555 Q And it was not a dusty mine? A Yes, I think I have my knowledge of the mine personally.

15556 Q And that there was no gas? A Yes, I think I have my knowledge of the mine personally. 15557 Q Is your opinion now it would be necessary, in the oldest mine in the Colony, if you anticipated a fall, to withdraw the men? A No, that is absurd.

15558 Q Then what conditions would you lay down as to when they should be withdrawn? A That is a thing that would take a week to explain. I would have to anticipate every little thing. It depends entirely on the conditions, as to whether the men should be withdrawn or not.

15559 Q Surely you could give the Commission a general idea, without going into the matter in detail? A Your question is so general that it could not be answered, except by a most detailed explanation.

15560 Q I do not want to ask you all these details, if there was no gas and no dust, what would you do? I put it generally? A I would say this: if, in my opinion, it was not necessary to withdraw them, I would not withdraw them. I would base my opinion on my judgment of all the circumstances surrounding it.

15561 Q You have told us you would do it if the conditions were the same as at Krebbs. What were the conditions at Krebbs? A There was no area of ground that fell.

15562 Q We would anticipate that at any mine? That is what I get to put? A Under the same conditions.

15563 Q What were the conditions? A I cannot say. They were the same as all over the district, speaking generally.

15564 Q Is a large fall of that kind was expected at any mine in the district, would you withdraw the men there? A That would depend entirely upon my own judgment.

15565 Q How do you mean? A I speak upon my own to you. That would depend entirely upon my judgment and judgment, founded upon practical knowledge.

15566 Q Then your previous answer cannot be any use to the Commission—when you said that, if the conditions were similar, you would withdraw the whole of the men from the whole of the mine. What is the use of that answer, if now you tell us that it would depend entirely on my judgment? A But you take that answer to quite a hard way—in a way in which it was never intended to be taken. I said, if I had anticipated a fall that in my opinion would give results similar to those at Krebbs, then I would withdraw the men.

15567 Q But you were asked what were the conditions. All we want to get, really, is some definite opinion from you, as my report, as to what can be done to avoid these things in the future? A A mine is a matter that you cannot lay down all rules and regulations for—you cannot make rules for every contingency. A lot has to be left to experience, and discretion, and judgment in the matter. If the Manager is competent, he has the knowledge of these things, and he is acted with his responsibility, and acts accordingly.

15568 Q Then everything depends on having a competent Manager, is your opinion? A I should say so.

15569 Q What method of examining waste workings do you adopt at the collieries which you have charge of? A We examine insofar as possible.

15570 Q What does that mean? A We go to all the dead ends and the edges of all fallen ground, and that sort of thing.

15571 Q Supposing you have a fairly large area, with the timber drawn, and the roof standing intact, and no indication of a fall about to take place, what do you do then? A You would satisfy yourself that there was no explosive gas there.

15572 Q How do you satisfy yourself? A In the usual way.

15573 Q In what way? A You go and examine, I suppose.

15574 Q What method of examining do you adopt? A You go and examine to see whether there is any gas there.

15575 Q Do you go in with a safety lamp, and go in beyond the edge, or stand at the outside? A It entirely depends on the conditions. If it is a mine that is going off explosive gas and is worked with a safety lamp, then you could go and examine with the safety lamp, but, if it is a mine that is not going off explosive gas, you would examine accordingly.

15576 Q Then you tell us now that where no explosive gas is found you simply go to the edge of the place? A No.

15577 Q How far would you go? A As far as is consistent with safety.

15578 Q Is that the method you have adopted? A Yes. Of course you cannot tell a man to go into a place where the roof may fall on his head and kill him.

15579 Q I put it to you that way. The roof is standing, with no indication of falling. Of course, if possible, if it comes suddenly, and takes half a second to fall, then it would be unable to go anywhere? A If I understood you to mean a place that is standing up, then you could go to the face of that place.

15580



18985 Q No. There is a large area standing, with the timber drawn; you want it to fall, but there is no indication of so falling? A Those substances are hardly safe. Would you expect a man to go into a place where you had drawn the timber and you expected the roof to fall?

18986 Q As a matter of fact, I have gone? A I would not want any officials in a place like that.

18987 Q Would you be satisfied if it was examined at the edge of the standing pillars that supported this gas? A That would depend on the condition of the surrounding areas. You would probably get some indication of the state of this place at the other openings.

18988 Q Is there any method you could suggest, some method of testing where it would not be safe for a man to go in to test the condition of the center of these gas? A As a broad principle, I think this could be adopted: if you put the air through the waste, then, if you get the condition of the air that is coming from the center of the gas, you get the condition of the center of the waste.

18989 Q Is that always practicable? A It is always practicable, and that is a very good principle to adopt.

18990 Q Supposing you had a large area which was just like a gasman, and you could not possibly get the ventilation through it to see what it contained, as there any suggestion you could put before the Commission whereby other means might be adopted of sensing that place without the necessity for a man to go in? A In the first place, I would never allow any of my old workings to remain in a gassy condition. If I knew that any of my old workings were going to have gas in them, I would jolly soon get air through them.

18991 Q They would want to be open for the air to go through? A You could force air through over the top of the fall.

18992 Q Your idea is to get ventilators into these standing gas? wherever you suspect an accumulation of gas? A Yes, wherever it is practicable to do so.

18993 Q You have had some fires in the mine of which you are Manager? A Yes, we had a fire.

18994 Q How were those fires brought about? A The miners were working a pillar—I may mention that we made our gas towards the end of our boundaries; we had to control gas like that [pointing to the Show Kneels place], and we allowed a portion of the return air to pass through the gas. Well, at this particular place—I was there the day previously with the Inspector of Collieries, and on top of the fall we got a jet out of inflammable vapour with the hydrogen lamp—the man was working with naked light in the face—the face was absolutely clear—we could not get a show [of gas] there.

18995 Q How far was the face from the edge of the gas? A One side of the face went right on the gas. So I got the under-manager and talked it over, and told him to put a lot more brattice in to drive that stuff out, and I told him to go there next morning and look at it, and I said, "You take a heavy ton, and examine it", and he made an examination, and got absolutely nothing. Then he went over the bottom of the place—it is below gas as we are speaking of—and he came an examination with the naked light to see if he could find any carbon. The gas came in return there—a lot of a squall. He found nothing at all. Then he went to put the return the way we had arranged the night before. Twenty minutes elapsed, between the under-manager's coming away and the return of the deputy; and when the deputy got there the man had finished all work at the face and moved, and came back and threw these light off their caps on the face; and their light was thrown close to one of these, capers in the face, and it did not, just like a squall, or to some back that was under the fall, and let the back on a prop, and extinguished the light in other pieces of broken props and into the gas.

18996 Q And that was the cause of the fire? A That was the cause of the fire.

18997 Q Do you say that you saw discovered? you said of gas there? A That is all. And that was high up. We got in a big work on high as we could get. That Indian girl of Collieries wishes to have this particularly, that, at the moment of his coming in, it is heavy, and, if it is allowed to lie in a state of rest, it will be on the bottom; but, if it is stirred up with an air current, the different gases in it are broken up, and the lighter gas rises, and it is that factor which causes these low percentages, especially, in the gas.

18998 Q In view of the fact that you did anticipate danger there, was it considered desirable by the officials? A For gas?

18999 Q Yes. I must decidedly. I had examined it there the day previously, and the Inspector had been there the day previously. It was examined regularly.

19000 Q Was it examined frequently during the day shift? A It was examined once during the day shift, and always by the night deputy.

19001 Q If you have pillars standing in your mine, which are abandoned for the time being, are they examined? A All pillars are examined in South Bank at the present time. We make it a point to get at the condition of every face. I do not mean the old workings; I mean the faces standing between places that are working.

19002 Q Is it your practice to have an air current travelling round these places which may be temporarily abandoned? A That is in accordance with ordinary practice.

19003 Q You make it a practice to have that done always? A Yes.

19004 Q How often do you do your waste examinations? A We examine wastes at South Bank at the present time twice a week—we are only required to do it once a week, but we are doing it twice.

19005 Q Do they examine the whole of the waste twice a week? A As far as practicable.

19006 Q They do not select a gas during one week and another pure next week? A No, the whole of the waste workings. We go in as far as it is safe and as far as it is practicable.

19007 Q I suggest you have got all reports to submit as regard to these examinations? A Yes.

Further examination by Mr. Robertson—

19008 Q I think you said during your evidence that you considered Kneels, prior to the explosion, a safe place? A I did.

19009 Q In view of what has occurred, do you think that a mine of that character should be worked with naked light as before? A No, I should say, in the light of what has happened there and the danger from gas with naked light, that it is a wise thing to see safety lamps under conditions where a mine goes off a coal quantity of gas.

19010 Q With a view to that Kneels, standing has been a violation to the most respectful view of the dangers of a mine slightly gassy? A Well, you may take that view of it, although—(Interposed).

19011



- 18908 Q I am asking—do you take that mine at all? A Yes, I would say that any mine that gives off a small quantity of gas should work with safety lamps.
- 18909 Q Such a mine is what you may call potentially dangerous? A Yes.
- 18910 Q Of course you know there has been a great deal of difference of opinion among mining men as to when a mine should be worked with safety lamps—with some men there is a difficulty in drawing the line? A Yes.
- 18911 Q Do you think it is highly necessary that every mine should be clearly defined? A Yes, I should say that very much that gives off gas—any mine that you can get a decision of gas, say, up to a half per cent. with the hydrogen lamp.
- 18912 Q Would you draw the line more at half per cent? A Yes, I mean half per cent. in the flame, not in the mine. I would go on far as that, but not further.
- 18913 Q But the probability is that, if you had examined Mount Kemble Mine in the days, you might not have detected even a half per cent. Would it not be reasoning on safe lines to define a gassy mine as "a mine that gives off gas"? A Possibly. I had that in my mind when I was speaking about half per cent. That is a quantity which you could detect, and if you put that quantity I think you should see safety lamps.

Further examination by Mr. Ritchie.—

- 18914 Q Do you say that Kemble Mine was giving off gas? A No.
- 18915 Q Do you believe it was giving off gas? A No, I cannot believe that; because I have got no evidence to support me in that.
- 18916 Q Do you think it was not giving off any gas? A So far as my knowledge goes, it gave off no gas.
- 18917 Q Of course you know you have discovered gas in Kemble previously? A Yes, but that is under an exceptional condition.
- 18918 Q But, if it was not giving it off, you could not get it? A But that gas is explainable in some other way.
- 18919 Q Would that be generated in some other way than the usual way? A I should imagine that that was present by the distillation of the coal caused by heat by the explosion; and that would rise to the highest part of the mine, and be present there.
- 18920 Q Then I take it the Kemble Mine did not give off gas? A That is my impression.
- 18921 Q And, in view of that, some chambers taking place at a mine which, in your opinion, did not give off gas, do you still think that there should be a report of gas before safety lamps are used? A That is rather hard to answer, because it is not a question of gas altogether. It is a question of the dryness of the mine, its temperature, and so forth. For instance, I have a mine at Newcastle where it is damp, and where gas has never been seen, and the workings are very shallow, and, in that place, really, I think it would not be any safer with safety lamps than with naked lights.
- 18922 Q Then you hold this opinion, that it may be necessary to use safety lamps where no gas is being given off? A You could not show where gas was not being given off.
- 18923 Q Do you think it may be necessary? A Yes, by reason of the danger of inflammation of the mine, the danger of bark and stuff.
- 18924 Q You have told us that, in your opinion, Kemble was not a gassy mine, and yet we have this disaster there? A Yes, but I should certainly say that it is right now to use safety lamps in Kemble.
- 18925 Q But there are other mines besides Kemble which may never have been reported as so safe as Mount Kemble? A I think that is a matter to be left. I think if a mine gives off gas, if you can detect gas, it is safe to put in safety lamps, and if you cannot detect gas I think the conditions surrounding the mine are such that, if the Government inspectors think safety lamps should go on, they should say so, and they have satisfaction, if the Manager thinks not.
- 18926 Mr. Johnston Q I think you consider that it is safe to put safety lamps into every mine that is not extremely wet, or that is dry and dusty? A Yes.
- 18927 Q Did you give some evidence on the effect of watering mines? A We do water to a limited extent at South Wales; and that is only a portion of the travelling road, and on some of the engine places. We do not water the coal.
- 18928 Q Do you consider that there is a danger of injury to the roof or face or sides by putting watering? A Yes, if you have a soft pavement. The water soaking into the pavement might cause the pavement to heave. Some of the roofs contain lime mortar, and if you put water on them it would tend to make them less strong.
- 18929 Q What do you think would be the effect of watering in a hot mine, a mine where the climate temperature is naturally 80 per cent.; what would be the effect of the watering on the timber? A I should expect that it would increase timber expansion. The timber would not last so long, you would have to renew your timber more frequently.
- 18930 Q Is it a dry and damp mine, where you know, I take it you would think watering in the vicinity of shaft necessary? A Yes.
- 18931 Q And, if the vicinity of a shaft is watered, would you consider it necessary to water the roadway? A No, I do not think so, not absolutely necessary. If you water in the vicinity of a shaft—that is probably the most likely place for the inflammation of dust—if you water there, I think that would be sufficient.
- 18932 Q If you water in the vicinity of a shaft, and the mine is worked with safety lamps entirely, what danger do you anticipate from dust in a roadway, a heavey road or a travelling road? A Not very much.
- 18933 Q Is there any? A I cannot say there is much danger.
- 18934 Q Would you consider it preferable to water all the roadways in some large mines? A No, I do not think it is preferable. Where is the water to come from? We have not enough water.
- 18935 Q Apart from the effect on the roof and the floor and so on, it would be very costly? A Yes, and apart from the cost of the thing there is the difficulty of doing it, by reason of the shortage of water supply. There is not the cost to put it in, and then you cannot get the water. We have these droughts, and then even our big dams go dry in droughty seasons.
- 18936 Q Do you consider it of very great service to water sections of a mine? A I do not know whether actual watering is of any good. There is one case I quoted yesterday. The idea is to prevent the travelling of an explosion.



- 19937 Q. We do not want to go any further than Kynolds to prove that the explosion jumped long lengths of west road? A. Yes.
- 19938 Q. Therefore, if, without it, it is in the way of any mine, would you consider it necessary to have very long lengths of such distant workings? A. Yes, they would have to be very long.
- 19939 Q. That shall show a working system of a very extensive mine, would it really? A. Yes, but it would not be so easily as working the whole.
- 19940 Q. But the best coal, but the management? A. Yes.
- 19941 Q. When you consider it is advisable to prohibit the use of gunpowder in mines worked with safety-lamps, or which are dry and dusty? A. Yes, I do, but the trouble is to get a substitute. I think, if we could get a stock of permitted explosives here, then I should say that any new regulations should require the use of permitted explosives in mines using safety lamps, and dry and dusty.
- 19942 Q. There does not appear to be any difficulty in getting supplies of permitted explosives? A. They could be extensive, I expect. It is in a sort of transition stage now. The merchants do not now stock carrying a big stock, and the permitted list is being modified so frequently, and there is the determination that safety is in the explosives by storage, and the distance from the manufactories.
- 19943 Q. You are aware that a factory was established on New South Wales some years ago for the manufacture of nitrolic acid, and it came to grief through want of support, in point of fact only one military tank supplies from that factory; but, assuming that a number of collieries required supplies of explosives, do you think there would be any difficulty in establishing a factory here? A. There should be no difficulty, although all of us are not agreed to that particular explosive—all of us are not disposed to embrace. There are other explosives which are equally as safe as nitrolic.
- 19944 Q. Of course the permitted explosives are only comparatively safe. They offer a greater degree of safety than gunpowder, and you are decidedly in favour of the use of permitted explosives? A. Yes. I would not with satisfaction the enforcement of that explosive.
- 19945 Q. And you are in favour of the shot firing being in the hands of officials specially appointed for the purpose? A. Yes, that I am.
- 19946 Q. What method of firing do you approve of, electric blasting? A. So far as I am, there is no danger with electric blasting. The system is of low tension, and I have not seen anything to show that sufficient heat could be given off to ignite gas.
- 19947 Q. It is better than lighting with a fuse? A. If you anticipate conditions where the lighting of a fuse would be likely to cause the lighting of gas, then the lighting with electricity would be safe.
- 19948 Q. With reference to the type of safety lamp, do you consider it necessary that there should be some control over the type of safety lamps to be used? A. I do.
- 19949 Q. That is to say, it might not be in the power of any Manager or Company to use any lamp at all? A. There is a measure of opinion as to which lamp should be used, and I do not see any reason, in expense or anything else, to depart from that measure. I would never think, myself, of using an obsolete type.
- 19950 Mr. Justice Q. What lamps would you call obsolete? A. There are some lamps—the Davy lamp, and the Clanny lamp, superseded. I should say that the lamps should be of the same class as the Deane lamp, and equally safe.
- 19951 Mr. Justice Q. I would like to ask you about General Rule 13—have you ever been able to enforce General Rule 13 without, along there and elsewhere, very hard? A. It is a very hard rule.
- 19952 Q. Do not put it back it might be made simple enough for a case of industry relations, with a short-term, to understand? A. The understanding is that if a set of conditions makes evidence of danger you should withdraw the workmen, and, so my mind, that intention appears to be simply enough to allow an officially qualified person to group it. The working, no doubt, in very intricate.
- 19953 Q. It is very involved. I do not understand it to this day, and I have been reading it for years. There is no reason why the object of that rule could not be put into plain and simple language? A. I think it ought to be in a simpler form.
- 19954 Q. Would you be in favour of a Board, consisting of representatives of the different interests, to which parties to dispute, say, between the Employer and the management, or questions of new rules, or special rules, could be referred? A. I do not know. I think we have a better guide than that. In that matter, you see, arbitrators are so scarce. I think it is a waste of time to take the English regulations before us.
- 19955 Q. But if we can improve, even on the English Act? A. We might be able to improve, but the question is whether the present regulations would stand the same test as the English regulations.
- 19956 Q. There is no earthly reason why General Rule 13 should not be amended with advantage? A. Yes.
- 19957 Q. There, in the matter of special rules, it is very desirable that representatives of directors, and the Government, and the miners, should have an opportunity of considering them before they are put in force? A. I think, regarding special rules, there should be a careful study for each district, and they should be drafted by representatives of the miners, miners, Managers, and Inspectors.
- 19958 Q. The particular district? A. Yes.
- 19959 Q. Of course, even in particular districts the conditions may vary very considerably, for instance, there is a very wide difference between the Helmsburgh Colliery and the Southern Collieries? A. I think some of the Helmsburgh rules could be adapted.
- 19960 Q. Could not you adopt the whole 212 of them? A. Some of them are like General Rule 13. You want to combine the rules. We make our rules altogether too lax. Our rules on the South Coast are too weak.
- 19961 Q. Is it not necessary to provide for all possible offences? A. There should be a code of the offences, and a scale—a schedule—so that it would take up less space.

— Cross-examination by Mr. Loughton —

- 19962 Q. Your opinion that Kynolds was a safe mine depended upon one visit made by it? A. Yes; one visit, plus a knowledge derived from circumstances, viz., with the miners, Managers, and other people.
- 19963 Q. How long did you see risk bands last? A. Somewhere about five or six hours. I forget the exact time I was in Kynolds.



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19005 Q And on that occasion you did not go to inspect the safety of the mine, did you? A Partly that, as well as other things.

19006 Q And the conversation with the miners—did you mean the miners of Kenilba? A The miners in the district generally.

19007 Q Do you refer to men who may not have been at Kenilba at all? A To men who may have been there, and to men who may not have been there.

19008 Q That it is in this way that you have that question? A Yes.

19009 Q Did you know that gas had once been discovered in Kenilba Mine? A Well, I heard, I think, about twenty years ago, that some gas had been discovered.

19010 Q However, you did know, then, that at some period Kenilba Mine gave off gas, is that right? A Well, if you can attach my recollection as far back as that, I did. I have heard that.

19011 Q Did you know that a man had been killed by an explosion of fire-damp? A I never heard that, until after the inquiry started in Wellington.

19012 Q Do that your opinion with regard to the safety of the mine left out the fact that a man had been killed in Kenilba with fire-damp? A I did not know that.

19013 Q Knowing it now, does that alter your opinion regarding the safety of the mine? A Not necessarily.

19014 Q Do you know that Mr. Rossell, the Manager of Kenilba Mine, stated seven years ago on oath that the mine gave off gas in small quantities in small quantities? A All mines do that, I suppose.

19015 Q Did you know that?

19016 Q Now, as a man had been killed with gas, did the Manager also state that the mine gave off gas in small quantities, you did not know those two facts when you gave your opinion—do they alter your opinion regarding the safety of the mine? A No.

19017 Q Then, may I take it that, when a mine is stated to have been giving off gas, and a man was killed in it, you consider it safe to work in the mine with open lights.

19018 [Mr. Wade objected to the question.]

19019 [Mr. Squire.] Q Do I understand that if you knew a mine had given off gas, and that a man had been killed in it from an explosion of gas, you would still consider it safe to work that mine with naked lights? A I did not say so. There is a set of conditions altogether apart from that. All mines give off gas—many more, in quantities from imperceptibility to a maximum quantity. A set of circumstances may be such in some particular district that no particular place may give off gas from a fault—you may get a small quantity of gas lying there, and it might be that exceptional circumstances that would bring about that question that you speak about.

19020 Q I put it to you then Mr. Rossell had sworn that the mine gave off gas in all places in small quantities? A It is simply a question of quantity.

19021 Q Then, if you had known that Kenilba Mine had given off gas in small quantities in all places, and that a man had been killed in it by an explosion of gas, in your opinion was it safe to work that mine with a naked light?

19022 A Yes, I do. What time do you mean—a recent time?

19023 A Yes, not exact enough. You want to make those conditions a little more definite. It is a question of degree. I want a degree. I form my opinion on a degree.

19024 Mr. Squire.] Q You told Mr. Robertson that, if a mine was known to give off  $\frac{1}{2}$  per cent of gas, you would have it worked with naked lamps? A Yes.

19025 A Yes, I do. There should be another qualification in that question. It was in the light of what has taken place at Kenilba.

19026 Mr. Squire.] Q I ask you do you make that qualification that Mr. Wade now makes, that it is only in the light of what has taken place at Kenilba? A Yes, you take it that way.

19027 Q You say so? A Yes.

19028 Q Will you tell me anything that happened at Kenilba that at all altered the dangerous conditions that were there before the disaster? A I have had no experience near Kenilba, as well.

19029 Q I am talking Kenilba. You have adopted what Mr. Wade said, that it is in view of the experience you got from Kenilba? A It is near the Kenilba disaster.

19030 Q From experience then? A Yes.

19031 Q Do I understand that that it is not in view of the light you got from the Kenilba disaster that you have given that opinion to Mr. Robertson? A No, you must not understand that. It is by a collection of circumstances that have arisen near Kenilba.

19032 Q Tell me where, beside Kenilba? A In Coromandel, for instance.

19033 Q Anywhere else? A No, I do not see that I can say any where else.

19034 Q Now, I have got me confused in the light you got from Kenilba and Coromandel? A Yes.

19035 Q What light was it you got from those two places that forced you to this conclusion about the disaster? A That the Coromandel case, which certainly directed my opinion about the matter. There was a place that was examined separately, and it was known to be giving off substantial quantities of gas. It was examined by myself the day before, in company with the Government Inspector, and, in all respects and purposes, was practically safe, and there there was the accidental ignition in the presence of dry material, which caused a considerable amount of anxiety and expense to remove.

19036 Q That accidental ignition was your new light? A Yes.

19037 Q What new light did you get from Kenilba? A Well, that was viewing the whole circumstances, one would say if there was not of these things happen under certain circumstances certainly, as for instance, adjacent goes with, and in accordance with the practice that is pursued in the community, then we had better go a step further.

19038 Q Did not you on several occasions attend Kenilba years before, and the conditions mentioned referred to in Mr. Rossell's evidence? A I had never seen Mr. Rossell's evidence.

19039 Q Had not you read the evidence taken on the Commission on the Coal Mines Bill? A I have read part of it, but not Mr. Rossell's evidence.

19040 Q But do you not see that the two facts which you have put forward as changing your opinion you had already got in Kenilba before? A I do not say any more about that.

19041 Q Having been told of those two facts, Mr. Rossell's evidence, and the hearing of that man, does that alter your mind as to the Kenilba Mine being a safe mine just prior to the disaster? A No, it does not.

30000.



30000 Q If there is evidence in each of various mines having reported to the deputies the problem of fire damp from time to time, does that alter your opinion regarding the safety of Kamble's mine? A No, it does not.

30001 Mr. Eshelby: He might explain, when he speaks of Mount Kamble Mine being safe, whether he means safe at the time of his inspection, or when the disaster took place.

30002 Mr. Eshelby: Q Do you mean that it was safe when your examination took place, or safe on the day of the disaster? A On the day of the disaster.

30003 Q And you tell me further, that the fact of various reports having reported to the deputies the existence of gas does not alter your opinion? A The fact of the miners saying so. That would all depend entirely upon the quantity of gas. You have not given a quantity.

30004 Q As a mining Manager, those three things do not alter your opinion regarding the safety of the mine? A, I do not say anything of the sort. You say that.

30005 Q Then I ask you, do they alter your opinion? A I told you more before that they did not alter my opinion.

30006 Q Then, do they alter your opinion? [Witness did not answer.]

30007 Q I ask you whether you, as a Manager, assert that those three things I have mentioned alter your opinion as to the safety of the mine?

30008 Mr. Eshelby: Mr. Eshelby is not putting the question fairly to the witness. In course the evidence is that the burning of the mine took place fifteen years ago, and Mr. Eshelby's evidence regarding the gas being given off was given some seven years ago. Mr. Selous is asked as to his belief regarding the condition of the mine on the day of July last year. Mr. Eshelby should put the question separately.

30009 Mr. Eshelby: I think that if Mr. Eshelby put his question now so distinctly we should be able to get on better.

(The Commission then adjourned from 1 until 2 p.m.)

#### ATTENDANCE

(On resuming at 2 p.m. Mr. W. R. Pratt attended to take shorthand notes of the evidence and proceedings.)

ALBERT EDWARD OSWALD BELLINGHAM, previously sworn, was further examined, as under:—

30010 Mr. Eshelby: Q According to the evidence given here, that you have reported the presence of gas to the deputies twelve months of this disaster, would you say that Kamble was a safe mine?

30011 Mr. Eshelby: [It is not in the evidence—the correct approach is before months.]

30012 Mr. Eshelby: Q Would that alter your evidence that Kamble was a safe mine? A Not altogether; it depends on the quantity of gas found.

30013 Q So that the fact of a mine having been burst by gas, was the fact that a Manager stated seven years ago that the mine gave off gas, was the fact that the deputies had reported gas within twelve months, would alter your opinion that it was a safe mine? A No.

30014 Q Now I come to the question of coal dust. Do you agree with this statement by Donald Shanks in his work, "The Causes and Consequences of Colliery Explosions"—

"In the coal dust that accumulates upon the floor of the main passage, there is a great measure of explosibility, which, once brought into action, is formidable in its development. Throughout the mine, whilst the suspension is broken down by air currents of wind, or the chemical action had for several weeks."

A I agree with that.

30015 Q Do you agree with this—

"The explosibility of this danger is dependent on the fact that the small quantity of coal dust necessary to be a disaster is always present in roads through which coal has been removed."

A I do not agree with that, because the coal dust is not always present.

30016 Q Do you agree with this statement—

"When it is remembered that only a few of conditions are necessary for an explosion to yield the greatest effect the Commission and statutory requirements will be recognized that there is an immense quantity of evidence to suggest, beyond the demands for the adequate precautions under notice."

A There are certain conditions there.

30017 Mr. Eshelby: I ask that the witness be allowed to see the context. It was put to him as being a general principle relating to dust on roads, but it relates to dust during in the vicinity of daisy roads.

30018 Mr. Eshelby: I am quoting from Mr. W. M. Atkinson's report in the Report of the Royal Commission on Explosions from Coal Mines. I ask the witness what he considers to be a dangerous condition in the mine?

30019 Q Two are it states that only a few of conditions are necessary for an explosion to yield the greatest effect. I ask the witness what he considers to be a dangerous condition in the mine?

30020 Q Two are it states that only a few of conditions are necessary for an explosion to yield the greatest effect. I ask the witness what he considers to be a dangerous condition in the mine?

30021 Q Gas is only dangerous in conjunction with air. Do you agree that a few of coal dust per square foot of surface is dangerous? A Well you name the condition.

30022 Q Two oz. of coal dust and an exploded shot? A I admit generally Mr. Shanks' conclusions. It may be greater or less.

30023 Q You are not prepared to dispute it. A I am not prepared to accept it.

30024 Q Are you prepared to dispute it? A I am not prepared to dispute it.

30025 Q Do you know whether the tapping rods at Kamble required watering? A The mine did not want watering; there was too much water there for a mine.

30026 Q And I ask you that—[asked you whether they wanted watering?] A They were watered by the natural flow of water.

30027 Q Were they watered by other than the natural flow of water? A Not to the best of my knowledge.

30028 Q Do you know whether there was an accumulation of dust on the No. 1 main level haulage road? A No.

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- 20030 Q. But such an accumulation here, there, would the mine still have been safe? A. Yes, under the conditions I state.
- 20030 Q. Under what conditions? A. There being nothing to put the dust in a state of agitation to make it inflammable.
- 10031 Q. Do you assume that there was nothing to put it in a state of agitation to make it inflammable? A. Yes, on just as that way.
- 20032 Q. Your own opinion, assuming a condition set there? A. I do not say that.
- 20033 Q. You say the mine was safe if there was nothing to set the dust in motion; and now you say that something did set the dust in motion? A. Yes.
- 20034 Q. Do your own showing the mine was dangerous? A. No, not before the disaster.
- 20035 Q. Not on your own theory? A. No.
- 20036 Q. I think, in this theory of yours, that you account for the propagation of the disaster by a series of small explosions? A. I did not say that.
- 20037 Q. That is what is suggested to, above the initial explosion? A. I do not know whether there was a series of explosions.
- 20038 Q. At least there were some explosions? A. I do not know whether it was singular or plural.
- 20039 Q. Then, do I understand that, in cases where men were burned, it was one continuing explosion, or was it a series of different explosions? A. The mere subject to that of that description may have been within the range of one explosion of dust.
- 20040 Q. Is that your opinion? A. It may be so.
- 20041 Q. Is that your opinion now? A. I say it may be so.
- 20042 Q. Do you prefer your opinion that there was a series of explosions? A. I do not know that I see any one thing or the other.
- 20043 Q. Do you not know that some men were burned on the top of No. 1, and that some men were burned near Powell's Flat?—[interrupted].
- 20044 Mr. Reuben: And some in the tunnel north? A. I do not know whether they were burned.
- 20045 Mr. Lusk: Q. Do you know that the men were burned in the back heading of No. 1, some on Powell's Flat, and some near the mine tunnel? A. If you understand me correctly, I think there was a rotating zone in the 4th Right.
- 20046 Q. I want to know whether you adhere to the opinion that an explosion in the 4th Right burnt men at Powell's Flat? A. I cannot say. It is a matter of conjecture.
- 20047 Q. Do you not see that it is untenable? A. It may be, or it may not be.
- 20048 Q. Where did you adopt the theory of the fall as the gas exploding the air? A. After the disaster.
- 20049 Q. Was it your own idea, or did somebody suggest it to you? A. It was my own idea. I had been thinking the whole thing over, and endeavoring to get the initial system. The theory seems tenable.
- 20050 Q. Were you or a great number guided to that conclusion by the evidence of how much you observed? A. Mainly that.
- 20051 Q. And, apart from the evidence of force, what other foundation had you for the theory? A. To get the initial ignition there must be an igniting point.
- 20052 Q. The direction of force, and the difficulty of getting the igniting point, guided you to that theory? A. Yes.
- 20053 Q. Do you agree with the statement of Donald Stewart—  
It is possible, therefore, that the origin of the disaster cannot be determined upon the evidence of direction of force, and that it would be too long in a circle to pursue the inquiry in that direction.
- A. Not altogether.
- 20054 Q. Do you disagree with it? A. Donald Stewart has one opinion, but there are other opinions.
- 20055 Q. Do you not see, if you cannot agree, that the fact upon which you have been working is assumed? A. That is that Donald Stewart is right. His idea is—[interrupted].
- 20056 Q. I am working on his idea as a guide to the origin of the disaster? A. That is the impression of another statement.
- 20057 Q. That impression does not effect the statement? A. Perhaps not, I have read the book.
- 20058 Q. Do you disagree it—  
It is possible, therefore, that the origin of the disaster cannot be determined upon the evidence of direction of force, and that it would be too long in a circle to pursue the inquiry in that direction—
- A. No. [Pause.] It refers to one disaster.
- 20059 Mr. Reuben: Is it a reference to one disaster, or is it a general opinion?
- 20060 Mr. Lusk: It is a general opinion running through the whole of the book.
- 20061 Q. Does not your opinion, in reading that explosion do you consider the evidence of force as reliable? A. On certain points they are.
- 20062 Q. Is what extent do they become unreliable? A. They are reliable after the real dust explosion.
- 20063 Mr. Reuben: I think that the explosion occurs in a series, and there is a course of interference. At the center of each series he gets bigger. At each of these initial points you have a force radiating from a different center, and you build from this center and find you have gone another way.
- 20064 Q. Is not that consistent with the force going in one direction? A. No.
- 20065 Q. Is there not a force on the track of the main explosion? A. I think it is a series of explosions, and that a radius of force is made at these points.
- 20066 Mr. Reuben: I gather that you mean that there is fresh oxygen at these points, and that, as more oxygen is developed, there is another explosion, and that the main explosion proceeds a different road with greater intensity and different force? A. Yes.
- 20067 Q. And the explosion will overlap one another? A. Yes.
- 20068 Mr. Lusk: Q. Perhaps you will tell me, if you were guided by evidence of force, what particular evidence of force directed you to No. 2 Right as the origin of the mine? A. The mere element of force. That point was a most distinct split.
- 20069 Q. Did you observe the conditions yourself, or were they furnished from maps or other sources? A. I saw them myself.
- 20070 Q. Did you see all the conditions? A. I saw all the conditions from that point forward.



20071 Q I suppose you admit there were a number of evidences of force you did not see at all? A I think I got in the back of the main explosion and followed it on — but I do not say that I saw them all.

20072 Mr. Acheson Q You do not quite agree with Donald Stuart on the end dust theory, but can you give any other authority? A That is the Big C Co. opinion on God-dust and Levington's report. They have different opinions. Donald Stuart's opinion is not authoritative.

20073 Mr. Acheson Q It is only one man's opinion.

20074 Mr. Acheson Q What is his authority? A Donald Stuart has written some clear articles on the subject.

20075 Mr. Acheson Q To be not the only man who created the theory? A I think I have seen it advanced somewhere else.

20076 Q Is it not his pet theory. Is it not Donald Stuart's "own baby," as to speak? A Yes, I suppose so.

20077 Mr. Lysaght Q Regarding this particular point about the evidences of force being contradictory, can you give me any disinterested opinion? — [After a pause]

20078 Mr. Wade Q That is not the question you asked before.

20079 Mr. Lysaght Q I ask it now. Can you cross one authority who says that the evidences of force in a real dust explosion are not contradictory? A No, I do not say that I can.

20080 Q It is not a fact that the evidences of force in the report of the Royal Commission are not contradictory, and that is why they are accepted? A Perhaps not, I did not say so.

20081 Q Can you give me an authority? A I do not carry those things in my head.

20082 Q Have you come to the conclusion that in a real dust explosion the evidences of force are contradictory? [No answer.]

20083 Q Let me put this to you. Is it not characteristic of end dust explosion that the evidences of force are contradictory? A, Take in cases of gas explosions they are — there are some instances that you cannot reconcile.

20084 Q That being so, and you only having evidence of forces which were from the 4th Right, do I understand that it was on the evidence of force, observed only in the main level travelling road, that you based your opinion? A I do not say that.

20085 Q Then what did you say? A I noticed all the pieces to the left-hand side of the jig, and also observed other places.

20086 Q Do you know that at Point B, which is a long way from the main level, there were seven ships blown off the rail? A I saw none, I do not know about seven.

20087 Q What force did that indicate? A That indicated a split on the pieces to the left towards these ships.

20088 Q To the left of the main level? A Yes.

20089 Q Do you know that the explosion travelled along the 4th Left rope road and on to Point B and again the ships? A No.

20090 Q Do you say that there was an explosion to Point B that blew the ships off? [No answer.]

20091 Mr. Acheson Q Is not that what you do say? I understood you to say that the force split and that it travelled along the 4th Left and knocked off the ships? A I said the force of the blast.

20092 Q You mean the force itself, but what you say is that the blast did not reach that point? A Yes.

20093 Mr. Acheson Q Was Mr. Lysaght's opinion of one moment blast, or is he basing on the assumption that there was a second end dust explosion in by the blast?

20094 Mr. Acheson Q You are assuming something which I did not say.

20095 Mr. Lysaght Q I am not assuming anything. What do you say? A I do not think there was any explosion at the last.

20096 Mr. Acheson Q One you account for the fact, that at its source by the way displaced by the explosion the force all went to the left and did not get to the right? A The absence of force on the right road.

20097 Mr. Acheson Q We have had it in evidence that that was a dusty part of the mine? A The dust may not have been so reprehensible as the others.

20098 Q Would a wooden door interrupt it? A I cannot understand why the door was not broken.

20099 Q It was broken out altogether? A I mean destroyed completely.

20100 Mr. Acheson Q Your reason is that the force did not get up the 5th Right because the dust was not so highly explosive? A I should say that may be the reason.

20101 Mr. Lysaght Q Do you not know that a wooden door opposite the 5th Right was blown towards No. 1 main level and not towards the travelling road? A I do not know.

20102 Mr. Acheson Q That is not the evidence.

20103 Mr. Acheson Q I tried to put that earlier right. My idea was that the door was left open. I found it open myself, and left it open.

20104 Mr. Lysaght Q Mr. Acheson found the door open towards the No. 1 main level.

20105 Mr. Acheson Q No, I found it open, but I cannot say which way.

20106 Mr. Lysaght Q Take the shippings in the two cut in again above the 5th Right. Do you know that these shippings were blown towards the 1 main level, and not towards the travelling road? A I lost my notes about the shippings. I do not know.

20107 Q Two had your notes — or did you not have your notes — on these two points when you came to the residence two days? A I lost my notes subsequent to coming to the residence I did.

20108 Q The absence of your notes will not bear on the question of your conclusions? A No, I had them at the time.

20109 Q Having your notes on that matter, did they say in which direction the shippings were blown? A I do not know, I have lost my notes.

20110 Q If you came to your conclusion, with a knowledge of the way they were blown, surely your conclusion will enable you to say which way they were blown? [No answer.]

20111 Mr. Acheson Q Mr. Sullivan says that he has no recollection about them.

20112 Mr. Acheson Q If he recalled his notes as to which way they were blown, that ought to help him to arrive at a conclusion.

20113 Mr. Acheson Q He may have come to a conclusion without having looked at them at all.

20114 Mr. Acheson Q I cannot recollect which way they were blown.



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20125. *Mr. Glynne* | Q Do you signed the map in which the stoppings were shown as being possible?  
 20126. *A* Yes.  
 20127. Q Do you tell me in which direction any stoppings were shown in that map? *A* Yes.  
 20128. Q Do you tell me in what direction the stoppings were shown on the 4th Left-hand page? *A* I cannot remember. It is a map that goes off to the left-hand side of the 4th Left-hand page.  
 20129. *Mr. Glynne* | Were there any stoppings there at all?  
 20130. *Mr. Glynne* | I wanted to see what the witness said.  
 20131. Q Come back to where the ships were blown off the rock, and to the place where the dead men were found? *A* Yes.  
 20132. Q Did you notice whether any of them were burnt? *A* They were found on the deck.  
 20133. Q If it was a split of the main explosion, travelling along the 4th Left, then it was that split of the force which burned these men? *A* One man who died there worked at Stafford's Shop. I found him sitting down quite naturally.  
 20134. Q If the explosion travelled along there, from the right of the main explosion, was it not that split that burned that man? *A* I do not think the man was burned. There was a piece of skin of canvas—he may have been burned or not.  
 20135. Q Did you notice evidence of burning? *A* No; he was blackened, but the other man had nothing marks on them.  
 20136. Q Did you come to this conclusion of yours after or before the inspection of the wreck of September 1?  
 20137. *A* Before the September inspection.  
 20138. Q Well, then, you had only been in the mine on the night of the disaster and once afterwards?  
 20139. *A* No.  
 20140. Q How often afterwards? *A* Five times.  
 20141. Q On five different days? *A* An five different times.  
 20142. Q I understood you to say that you went into the mine on the day of the disaster, that your foot was injured, and that you work in the next day? *A* On the Monday and on the following day—on two days.  
 20143. Q On the Thursday, Friday, and Saturday, you were with the same parties? *A* With my own eyes on the other things as well.  
 20144. Q Did you on the Thursday, Friday, or Saturday, take any notes in writing? *A* No.  
 20145. Q On the Monday did you? *A* Yes.  
 20146. Q On the Tuesday? *A* I would not be sure on the Monday and the Tuesday. I know that at the inspection on the Monday following I took notes.  
 20147. Q Leaving out the Thursday, Friday, and Saturday, you took no notes on the Monday and the Tuesday? *A* I supposed you.  
 20148. Q When? *A* In September.  
 20149. Q You had found your conclusions by then? *A* Yes.  
 20150. Q On the Monday and the Tuesday you took notes in writing? *A* Yes.  
 20151. Q After that Tuesday, right on to September, you made no inspection? *A* I went there later up in August.  
 20152. Q You were there on the Thursday, Friday, and Saturday, and took no notes? *A* No, not written notes.  
 20153. Q On the Monday and the Tuesday you were there and took notes? *A* Not on the Tuesday following the disaster.  
 20154. Q Were they not the only occasions you were there until September 1? *A* Yes.  
 20155. Q That is all the days you took notes in writing. When did you lose them? *A* I lost them in the process of shifting.  
 20156. Q When? *A* At the end of last year.  
 20157. Q After taking two days notes you formed a conclusion? *A* No; that was too bold. When I was in the mine I had my own eyes.  
 20158. Q I am only speaking of the notes in writing? *A* Yes, I took notes on these two days.  
 20159. Q On those two days were you not travelling in a different part of the mine from the map level?  
 20160. *A* No.  
 20161. Q Did Mr. Jones accompany you? *A* He was with me.  
 20162. Q Did you not travel in this way? you entered in the daylight landing, went across the cross-cut heading, and up the 4th Right-hand road? *A* There is something I forgot about this. I was there one day, but I have not remembered. I went in at the tunnel mouth and out that road.  
 20163. Q You forgot it? *A* I was with those in motion to show them the results of the explosion.  
 20164. Q Up to the moment you had inspection? *A* I forgot it.  
 20165. Q At that time was posing Mr. Vickers with you? *A* No.  
 20166. Q Do you remember seeing him? *A* No.  
 20167. Q Were you with Mr. Jones and Mr. Vickers? *A* I was not there any time with Mr. Vickers.  
 20168. Q Having formed the conclusion, have you discussed it with other mining persons? *A* Yes.  
 20169. Q Have you discussed it with Mr. J. C. Jones? *A* I think, at the latter part of the thing, that I saw Mr. Jones about this theory.  
 20170. Q Did you discuss it? *A* I showed him some of these things.  
 20171. Q Anybody else? *A* I have talked about it to Mr. Thomas Cook, and to Mr. Robertson, and Dr. Robertson.  
 20172. *Mr. Robertson* | Excuse me.  
 20173. *Robert* | The last time I met you, it Corbitt.  
 20174. *Mr. Robertson* | Q Not about the theory? *A* I was talking about coal dust.  
 20175. Q You may have discussed the Kibbula explosion, but the last I knew about, that theory was at the Corbitt? *A* I spoke to you about this coal dust.  
 20176. *Mr. Glynne* | Q Before last September you had adopted this theory—that the fall in the gas found was not—that that caused a high temperature—and that the dust became ignited? *A* Yes.  
 20177. Q Did you consider the proposition which Mr. Hume put to you this morning, that the fall of that road would have an opposing force below it? *A* I was afraid that, and still adhere to the theory.



20164. Q Do you not see that it would negate the assumption that the fall would be at the rate you say is fall? A No.
20165. Q Can you tell me at what rate a solid body will fall? A At the rate of 32 meters per second, and a gradual increase.
20166. Q What is the rate? A Sixteen feet for the first second, and it goes on increasing. I forget the application of the rate.
20167. Q Does not your theory assume that there were 4 feet 6 inches of atmosphere in the fall? A Yes.
20168. Q And the weight of the struts falling would be in proportion to the thickness? A No, according to the diameter of the fall.
20169. Q The weight would be in proportion to the area? A Yes.
20170. Q Assuming there was 4 feet 6 inches of a fall? A Yes.
20171. Q And the width of the struts was 4 feet 6 inches—I mean three—and a half inch fall 4 feet 6 inches? A Yes.
20172. Q Well, what do you think was the thickness? A It might be some foot.
20173. Q What did you assume? A I did not go into it like that.
20174. Q Will you not say that if it were only 6 or 8 inches thick there would not be sufficient pressure to force out the air? A No, there would not, if you assume that.
20175. Q What is the thickness that would be required to force out the air? A You want thickness, and also to get it to fall freely.
20176. Q What would you say? A I would say about 4 feet.
20177. Q You think that is a fair assumption? A Yes.
20178. Q Does this witness know what you are talking about? A Yes.
20179. Mr. Lynam: Q I am talking about the thickness of the struts that fell down, and forced out the rest of the air. You say that it was essential that it should be 4 feet or 5 feet thick? A We are assuming that.
20180. Q You could not get the rush of air unless you had it? A I never considered that aspect of the problem.
20181. Q You never considered the thickness of the struts which would be necessary to get the pressure? A Not particularly.
20182. Q Do you not know that an inspection of the golf edges discloses the fact that the fall was not completed until after the explosion, because the struts were clean? A That may be so.
20183. Q If the struts fell before, it would be covered with dust, but the evidence was that it was clean? A I did not say that it fell before the explosion.
20184. Q Do you say that the fall was not completed at the time of the explosion? A It is possible it might not be.
20185. Q Do you think that the struts at the golf edges might fall afterwards? A That does not follow.
20186. Q Do you not know that the same at the edge of the golf was found to be clean, indicating that it fell afterwards? A No.
20187. Q Did you look to see it? A I did.
20188. Q Did you examine the struts? A It was fairly clean—it was not dirty.
20189. Q The struts were exhibited by Mr. Johnson to be clean—do you know that the struts at the golf edge were clean? A It may have been clean.
20190. Q Does that not indicate that the fall had not been completed before the explosion? A It does indicate that to some extent.
20191. Q That being so, what because of your fall of 4 feet 6 inches? A It is covered over by a later fall.
20192. Q Do you not know that a week before the disaster 2 feet 6 inches had already fallen? A No.
20193. Q Did you know it? A No.
20194. Q Do I understand that you have your theory on certain things without knowing that a week before the disaster 2 feet 6 inches of that roof had fallen in that golf? A I did not know that.
20195. Q Now that you do know it, does that alter your theory? A Not materially.
20196. Mr. Bruce Smith: I thought the witness knew it before.
20197. Witness: I have known it since I was told this morning.
20198. Mr. Lynam: When you formulated your theory, did you not know that the roof had fallen? A I did not know of the fall of 2 feet 6 inches.
20199. Q Do you know that, when the struts cut the pillars within 4 parts of the 4th flight, they fell in such a way that they kept the roof from falling as on there is much pressure? A No, I did not know.
20200. Q Do you know that, within 20 yards of the entrance of the 4th flight golf, the wires had fallen almost entirely and strided down, with the exception of some pillars that had to be taken out? A No.
20201. Q From where did you get your area of 40 yards to fall? A In accordance with Morrison.
20202. Q When did he tell you? A Some day after the explosion.
20203. Q Do you not know that Morrison admitted that he had never got beyond the edge of the golf? A Yes.
20204. Mr. Hyde: Morrison said that on one side there was a length of 30 yards and on the other a length of 30 yards, which had fallen.
20205. Mr. Stone: He said that 30 yards fell, but he could not say how much had fallen altogether. He was hard to make out how he got to the golf, but he did not get to my apprehensible distance.
20206. Mr. Hyde: It was a play on words. He was asked if he went into the golf. That meant the middle of the golf, and he said no. And he was told afterwards that he had not done his duty by not going to the edge of the golf and measuring it.
20207. Mr. Lynam: Q You say that a body would fall 14 feet in a second of time? A Yes.
20208. Q Of course, the last part of that fall of 14 feet would be slower than the last part? A Yes.
20209. Mr. Robertson: If it takes a second for 16 feet, how do you arrive at half a second for 4 feet 6 inches? A The time is equal to the square root of the space fallen divided by 16.
20210. Q If it takes a second for 16 feet, what does it take for 4 feet 6 inches? A I worked it out according to the formula. It corresponds as speed as it falls.
20211. Q It falls 16 feet in the first second? A Yes.
20212. Q How can you possibly arrive at half a second for 4 feet 6 inches? A By working the formula. The formula is, that the time equals the square root of the space fallen divided by 16.
20213. Q You say he is right, but at first I think it does not appear so? A Yes.



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20214. Mr. Evelyn: Q Do you say Marston, who gave you the particulars of the fall, did not give you information of previous falls? A I spoke to him and asked him what the men was that had fallen; and he told me.
20215. Q He did not tell you that 7 feet 6 inches had previously fallen? A No.
20216. Q You have your conclusion as to the fact of that fall not having taken place, and you make the last which was reported as by that fall? A Yes.
20217. Q Then you would not have so much doubt for the subsequent fall to operate on? A Not so much; but it takes an very little dust to be operated on.
20218. Q If the first fall would take every half the dust, where would the other dust come from? A You have it at the mine.
20219. Q Whereabout? A In the mine there is the sand below on the surface of the mine, and there is the matter wiped up by the discharge.
20220. Q I think it would have had a material effect in altering your opinion if you knew that the first fall had taken place? A I do not want to make an excuse. I think there was a measurement of there at the 4th light. One theory presupposes that it was lit by a light, but where is the evidence of a light. That form would show me my light.
20221. Q Your theory presupposes that you have dust to operate upon? A But it takes such a small quantity of dust.
20222. Q If you have had other evidence here as to what the facts are, there is no harm in showing your opinion if you are wrong? A There is no harm about the matter in my mind.
20223. Mr. Evelyn: Q When you were told by Marston that there were 10 square yards to fall, do you not at once assume that that 10 yards fell in a solid body? A That is the assumption.
20224. Q It is an assumption which your theory depends upon, namely, to not well known in mining experience that after the first fall the subsequent falls are smaller and a rule, and do not fall in a solid body? A I cannot say that is my experience.
20225. Q Tell the jury that in Marston would say, the first fall probably be heavier than any subsequent fall? A No. In mining I have often got the lighter fall to commence with.
20226. Q Do you not assume that there would be one big solid fall? A Yes.
20227. Q Now you know that there was not one big solid fall; the first time, but a fall of 7 feet 6 inches. Are you not led to the conclusion that some of the falls would be much greater? A No, I am not led to that conclusion at all.
20228. Q And that the roof would be more likely to assume every after the first fall? A No.
20229. Q You think that after the first fall other falls would be heavier? A No, I do not say so.
20230. Q What do you mean—that it may be as heavy as the first fall or heavier? A It is hard to say.
20231. Q Did you not say that you expected the roof to fall in a solid block? A Yes.
20232. Q You expected that? A I meant a solid block horizontally, not in thickness.
20233. Q Not in thickness? A No.
20234. Q The thickness may vary from 2 inches to 20 feet? A It may be anything at all.
20235. Q You assume that the thickness was 2 ft 6 in.? A Yes.
20236. Mr. Evelyn: Q The thickness of what? A I mean the thickness of the fall was 2 ft 6 in.
20237. Mr. Evelyn: Q I put it by you again. Does your theory assume that the fall which comes on the air, and created that temperature, was 4 ft 6 in. in the thickness of the strata? A I do not say that. I say you may assume that thickness.
20238. Q Well, we have assumed? A It is not good judging me like this.
20239. Q I am not judging you. You said that the strata which fell was 4 ft 6 in. thick? A That is right.
20240. Q In order to get the temperature raised, is it not necessary to assume that the thickness of the falling body was 4 ft 6 in.? A As long as the body falling was thick enough to cause displacement of the air, that would be thick enough for the purpose.
20241. Mr. Brown: Did not Mr. Sellers assume that the weight of the falling body was so great that the factor of resistance by compression of the air might be left out. Tell he not calculate it as being a fall in mine.
20242. Mr. Evelyn: He said that he had considered it as a factor, and that the air would have an opposing pressure to the fall.
20243. Mr. Sellers: Q Is an air compressor, unless you have some power at the back of the piston you cannot have any pressure of the air in front? A That is right.
20244. Q Unless you had some weight in that 4th light you could not get any pressure there? A That is perfectly true.
20245. Q You want have the weight—the equivalent of the force behind the piston? A Yes.
20246. Q You must assume a certain weight of strata to give the power necessary to produce the pressure of the air in the cylinder? A Yes.
20247. Mr. Evelyn: Q What weight do you assume—that is the thickness of the strata? A This morning I said 4 ft 6 in.
20248. Q That is right that you assume 4 ft 6 in. in thickness? A I cannot understand this question.
20249. Mr. Brown: Q Did you not make a calculation on the assumption that the roof fell at a rate which is consistent with the formula you stated? A Yes.
20250. Q Do you not know that the formula is calculated on the assumption of a fall in water? A Yes.
20251. Q Then this is not a fall in water—that does not apply if there is resistance by the force under water? A I assume that the roof did fall would be in front to have not done underneath altogether.
20252. Q You assume that the weight was so great that, although the force underneath could not be actually calculated as a factor, it might be left out altogether in making the calculation? A Practically speaking that is so.
20253. Mr. Sellers: Q Coming to the direction of the air compressor. It is not a fact that the strata pressure is usually greater than the air pressure—or that the area of the strata piston is greater than the area of the air piston? A That is to get the movement.
20254. Q To obtain a pressure of 26 lbs. in that order, what thickness would you require? [No answer.]
20255. Q Every foot would be a pound, roughly? A Yes.



20256. Q With our pound in the foot, how many feet do you want to produce, your pressure of 20 lbs. I think only 4 ft. 5 in. of water you would only have 4½ lbs. per foot? A You said just now that the greater you make the column higher in relation to the air column you get a larger amount of pressure.
20257. Q In the air compressor, to get 20 lbs. at the end of the stroke, you have to have more than 20 lbs. of steam pressure? A Yes, you have to have sufficient power to create action.
20258. Mr. Sellen: Q With the roof of the gas tank hanging, there would be an atmospheric pressure under it of 15 lbs. in the square inch? A It would be more at the top and bottom as well.
20259. Q Does it not follow that you must have a pressure superior to 15 lbs. for every square inch? A What do you mean?
20260. Q With 15 lbs. in the square inch of pressure on the roof, you must have a weight in the weight balance over that 15 lbs. for every square inch that falls in. [Interupted]
20261. Mr. Sellen: I do not follow that question.
20262. Mr. Sellen: Q I say that it requires more than 15 lbs. weight of opposition to neutralize the 15 lbs. of air pressure? A I think you can leave the factor of the atmospheric pressure out.
20263. Q As you do? A Not as I do. First of all you have the mass of rock hanging. A rupture takes place, the atmospheric pressure acts over the whole of the mass first before it falls.
20264. Q It acts on one part of the mass only, and there is sufficient space to operate on the other part. A You only want a crack in the rock.
20265. Q Directly it splits it begins to fall? A Because the air gets in.
20266. Q The distance which it would fall was only 4 ft. 5 in. The impulse it would get from the atmosphere air would be nothing? A I never said anything about the impulse from atmosphere air.
20267. Q We can have that out of consideration? A Not altogether.
20268. Q Do you say the air given it an impulse? A No, but the air is present.
20269. Q In what way would the air affect it? A The atmosphere is, you know, the atmosphere air is a large quantity.
20270. Mr. Sellen: Q Do I understand that when the mass was falling the atmospheric air was on top of the fall? A Well, I say it that immediately it gets to falling point, the power of the strain that is dissipated by the atmospheric pressure above it.
20271. Q Where does the air come from? A From up!
20272. Q The air you have at the top of the falling mass? A It may be the air in the gas.
20273. Q What do you say it was? A I was not there to see it.
20274. Mr. Sellen: Q You have already shown all the air out and have left none to get out of the gas? [No answer]
20275. Mr. Sellen: The tendency is a case of that kind is for the propulsion of the air to be followed by a backrush into the partial vacuum formed.
20276. Mr. Sellen: And the air rushes into a vacuum very quickly.
20277. Mr. Sellen: There is usually a little time.
20278. Mr. Bruce Smith: Assuming that the whole thing comes down as like there is no space of time.
20279. Mr. Sellen: Q After the air got into the aperture at the 4th light, towards the mass level, would not the mass be filled by water in the 4th light? A No.
20280. Q Would not the air on every hole from the 1st light? A The impression which you give is an erroneous one. You do not understand the argument.
20281. Q And I do not think you do, either. A The objections do not depend on the question of the air displaced. There is a fall, and there is a displacement of some amount. [Interupted]
20282. Q How does that affect the "backrush" that I was speaking of? A What backrush. I have already for that.
20283. Q You say that it was 50 per cent. of the air which was forced out by the fall in the 4th stage of the 4th light, and that 50 per cent. was calculated on the backrush. Then what you said the morning.
20284. Q You say the displacement of the gas out will be 50 per cent. and you are assuming that a certain amount of air will escape into the gas out will be driven out? A Exactly.
20285. Q What allowance do you make for that possibility? A Fifty per cent. of the whole.
20286. Q That covers the backrush.
20287. Q It has nothing to do with the 50 per cent. because that never got out. The allowance you made was for air that did not leave the gas? A No.
20288. Q You want to change it now? A There was a certain amount of air displaced by this fall, of that I allowed 50 per cent. to be driven out, and the other 50 per cent. to provide for the other mass. The other 50 per cent. covers the backrush.
20289. Mr. Sellen: You are assuming that the air was absolutely driven out of a certain space without leaving a vacuum space in that space, so that there was an absolute vacuum according to your assumption. You have 50 per cent. of air driven out in one direction, and 50 per cent. in another direction, so that there is 50 per cent. of backrush wanting? A I do not see it.
20290. Mr. Sellen: Q Now, you tell me what evidence you had to enable you to assume that the roof fell 4 feet 5 inches, as far as thickness is concerned? A It is just speculation.
20291. Q What did you base it on? A The whole thing is speculative.
20292. Q Is it not wildly speculative? A No.
20293. Q In view of the fact that the test fall was 4 feet 5 inches, is it not wildly speculative to assume that the test fall was 4 feet 6 inches? A I do not say so. It was simply ordinary speculation.
20294. Q Do I not understand you to say that in your opinion the lamp had no part in the explosion at any time? A That is my opinion.
20295. Q If you have that 45 per cent. was driven over by the Chief Inspector in the back landing? A At what time?
20296. Q Shortly after the explosion? A After the explosion is finished altogether.
20297. Q I think you accounted for that by saying that you believed it reached from the coal dust? A It was a disarrangement of the coal. [Interupted]
20298. Q I am speaking of the gas forced by the Chief Inspector at Westfield landing. You know that the Chief Inspector, two or three days after the disaster, found an accumulation of gas with the safety lamp at the top of this landing? A I heard so.



Witness—A. H. G. Nelson, 62 February, 1960

20285 Q Do you say that gas was given off from the face of the coal, or that it was an accumulation by means of the explosion of the coal dust? I should think that it was due to the great heat going on in the mine after the explosion shuffling the gas under the seam.

20286 Q Does not your explanation that the dust exploded necessarily assume that there was gas in the coal face which that dust came? A Yes.

20287 Q Does it not assume that the coal seam was a gaseous seam?—

20288 Mr. Peterson: You can find coal gas without finding gas.

20289 Mr. Egan: I know the distinction.

20290 Q You assume that the heat dust might have a more severe than the explosion of the coal dust—would not that be an explosion of the gaseous matter thrown off by the coal dust? A Those portions of it might be, but not all of it.

20291 Q And I say all? A No.

20292 Mr. Anderson: Q You do not say that it is gas that might be got by distillation. There is a difference between distilled gases and other gases? A I mean that the coal when subjected to great heat would give off gas.

20293 Q The gas found, after chemical process, in condensation with the coal is not the same gas as is given off by the coal in the mine? A No, there is a difference in the composition of them.

20294 Q Do you mean that the gas which accumulated in the mine was gas set up by chemical decomposition as described by your book? A It might be the latter.

20295 Q It was the condensed gas in the coal? A Speaking broadly there was great heat, and the gas was distilled, the separation set at thirty various gases, and the gases rose by gravity to the highest parts.

20296 Mr. Anderson: Q Do I understand you to say that the dust contained fire damp? A I do not say that, but there are certain hydro-carbons.

20297 Q Chemically bound together? A Yes.

20298 Mr. Egan: Q I put it to you that fire damp is that the same was one which gave off gas. I now draw the attention to the following extract from Donald Stewart:

There was already at hand, in the coal dust lying upon the gangways of the mine, a practically unlimited supply of gases which might be given rise to an explosion. These gases were absorbed by persons which were suggested by the explosion heat of an ordinary lamp or candle or by the heat generated in the interior of a body of fire damp, and when the mixture became inflammable they carried destruction and death into the workings where oxygen was available, and these men or was open, to look down the temperature.

That is what you want to answer as to the way the gas exploded? A Yes.

20299 Q There is no suggestion here that it was heat from compressed air, but heat generated in the ignition of a body of fire damp as the surface heat of an explosion? A I do not say there was no heat.

20300 Q You assume that the heat came from the propagation of the air from the gas? A Yes.

20301 Q The only authority is the heat from two consecutive explosion heat of an ordinary charge of explosive, as laid by the evidence of the jury, and the coal dust simply is not carried beyond that?

A Evidence has demonstrated that gas can be obtained from coal dust simply by heat.

20302 Q When I asked you about the gas from the dust I wanted to see how you accounted for the Chief Inspector finding 15 per cent of fire damp in those workings? A It might be the accumulated gas from the explosion.

20303 Q The accumulated gas from the dust? A No.

20304 Q You say that it is fire damp that comes from the coal, do you not?—[Interrupted]

20305 Mr. Anderson: Q You may have a coal seam which gives off no fire damp, and yet you may have an explosion of dust from that coal seam which produces fire damp? A Not exactly.

20306 Q Is not that so? A The Chertown case was a similar case. That was an explosion in a mine where gas was not in hand.

20307 Q You may have an explosion of fire damp, and an explosion of coal dust, producing gases which are practically fire damp? A Yes, the gas has the same quality.

20308 Q You may get fire damp from an explosion of dust from a seam in which there is no fire damp? A Yes.

20309 Mr. Egan: Q Does the witness say that the percentage of fire damp was the result of an explosion of coal dust? If so, where it came from the coal dust? If it did not come from the coal dust, where did it come from?

20310 Mr. Anderson: You cannot find this that the coal was gaseous?

20311 Mr. Egan: Not gaseous.

20312 Mr. Egan: You put it to him that way just now.

20313 Mr. Egan: Q Do you not see that fire damp being forced in the top heading, I want to know where it was going to come from? A I cannot tell you. It may be the accumulated gas of the coal dust.

20314 Q Is that your assumption concerning the gas that was found in those workings three days afterwards?

20315 Mr. Egan: The evidence is four days afterwards.

20316 Mr. Egan: Q Would the gas found four days afterwards be gas which might have come from the coal dust? A Yes.

20317 Q Would it not have been consumed in the explosion? A Not necessarily.

20318 Q There may have been imperfect combustion? A Yes.

20319 Q Because of the result of imperfect combustion, it may have accumulated? A Yes.

20320 Q Do you not know that the current of air coming in the back heading was interrupted, and there was nothing to sweep it there? A It does not require a current of air sweeping it there, because gas arrives by its own gravity to the highest place.

20321 Q Is it not more probable that the gas found at the top heading, extending to the face, was given off by the face of the coal and did not come from the dust? A Not at all.

20322 Q Did you not find it not only there, but all along the face of three headings?—

20323 Mr. Egan: There is no evidence of that.

20324 Mr. Egan: Q How long afterwards did you know that gas was found there? A I never heard of it.

20325 Q Would it also pass upwards? A I would not offer my opinion as having evidence



25337. Q Do you say that the gas found in the top heading came from the coal dust? A What top heading? I do not know where that gas came from.
25338. Q Mr. Tolson found various percentages of gas under 1 per cent. in these headings, chiefly after the disaster. I want to know, in your opinion, did the gas come from the coal dust, or from the headings? The headings are to the left of No. 1 main level? A I think it is possible that the gas came from the headings.
25339. Q Do you know that a witness gave evidence of gas being found in No. 1 main level? A Some distance away.
25340. Q Yes? A I did not know that.
25341. Mr. Wells: That was in James heading, half a mile away.
25342. Mr. Egan: I am speaking about Smith, who was taking up stone on the 4th level.
25343. Mr. Egan: Q On the question of distilling gas—is there any way of distilling gas given from the coal by heat from gas given off naturally? A Some of the gases, in my opinion, are dissolved in that manner. For instance, the naps are the same, and the pure gases are supposed to have no smell.
25344. Q Gas distilled from coal from here is small? A I do not know in what degree.
25345. Q If you light gas distilled from coal, does that have a smell? A I never lit it. I have not done it.
25346. Q You told us you discovered gas yourself after the disaster. Did you notice if it smelt? A No, I did not notice it. There were a lot of dead horses about, and they may have affected my sense of smell.
25347. Q Was it different from gas you found elsewhere? A No.
25348. Q You would not notice anything by the coal or the flame? A No.
25349. Mr. Robinson: Whether the gas is given off from the coal naturally or by being distilled, there is not much? A No.
25350. Q It is due to the presence of other elements? A Some other elements may be present in it.
25351. Q Whether you find it coming from the coal or getting it through distillation, it has no smell? A No.
25352. Mr. Egan: Q Just let me bring your attention back to the location that was burnt in the top heading? A Which heading?
25353. Q As the top heading No. 11. A That is the back heading.
25354. Q You testified that that being burnt by the mine heat which would be there, and not by flame? A We had a difference of opinion about the matter of heat. I did not think it was flame. I think some would have asserted it more.
25355. Q Whether it was, it was mine heat? A Yes.
25356. Q The same mine heat which would operate on the coal dust and explode it? A It would operate on the coal dust and dust it.
25357. Q Do you know that the dust taken from the same place, and sent for analysis, showed that the volatile matter had not been distilled? A I did not know that.
25358. Q It is showed that the volatile matter had not been distilled, does it not support your theory that there was sufficient heat to distill it? A It depends where you got the dust from.
25359. Q From the back heading—from some place, only? —
25360. Mr. Robinson: Q Just at the spot where the furnace is burnt? A It does not affect my theory very much. Some of the dust may have been there.
25361. Mr. Egan: Q If there was sufficient heat to scorch the matter, there must have been sufficient to distill the volatile matter in the dust? A That does not follow.
25362. Q Is not your theory based on the distillation of the volatile matter? A Not the whole of it.
25363. Q Do you know then the analyst says that there was very little difference in the amount of volatile matter found in it, and the dust naturally? —[No answer.]
25364. Mr. Robinson: Mr. Tolson may not understand that the dust sent for analysis was supposed to be cooked. It was cooked off. But it was found to be practically unchanged, by the analysis? A It was, as I described it yesterday, melted.
25365. Q Fused together? A I called it melted dust.
25366. Mr. Egan: Q If the dust is fused upon analysis, and also upon microscopic examination to be unchanged, is that consistent with a coal dust explosion? A I do not see that it is inconsistent with it.
25367. Q Surely you admit that, in being about a coal dust explosion, you must have the volatile matter driven off from the dust? A To a certain degree, but not necessarily the whole of them.
25368. Q Partially? A Yes, given that, of some of the dust had been subjected to a greater temperature than other portions of it, it would not be altered. Some of the dust was only heated or melted, but it was not in such a state as to make the carbon volatile.
25369. Q Would you not expect some of the chemical compounds of the dust to be changed? A Yes.
25370. Q So far, the examination made microscopically and analytically show that it is unchanged? A None of the dust tested show that characteristic.
25371. Q Yes? A Concerning not just that dust and dust contents, relative to its weight, a large percentage of volatile matter, if you have a percentage of that there is the difference in the amount of gas.
25372. Mr. Bruce Smith: Four per cent. in the volatile properties (of volatile hydrocarbons) dust may appear to have been lost.
25373. Mr. Robinson: We have had dust analyzed and found 24 per cent. (volatile hydrocarbons). The volatile matter in the coal dust is 25 something.
25374. Witness: There are portions of the coal seam which are more friable than other portions of the seam. These bands contain a higher percentage of volatile matter. They are the bright bands, and they contain less volatile matter than the darker seams. If you have taken dust from portions of the whole of the seam of the mine, then you have not taken a fair proportion of that part of that seam in which there is the weak dust.
25375. Mr. Robinson: Q We presume that there is a fair proportion? A There are certain layers that yield a higher proportion of dust than others.
25376. Q You say that some of the bands contain more bituminous matter? A Yes, if you analyze those bituminous bands, and they yield 60 per cent. of volatile carbon, there is no wonder.



Witness—A. E. G. Sellers, 16 February, 1902

20377. Q Then some of the dust from the same contains more bituminous matter and some less? A. Coal of the lowest species, generally, which is the most bituminous, may make the most dust.
20378. Q Would you not expect to find, after the explosion, a considerable change in the chemical constituents of the dust? A. I would really expect to find a considerable change.
20379. Mr. Nichols. Q The sample of coal, in its natural state, came from the same surface in the dust? A. Some of the coal is stratified in different layers. It is in the highest material from which you got most dust, the part is that on the surface the dust is very light, and it is made of soft and highly bituminous. I think that it would be quite a proper proportion of volatile hydrocarbon then dust from the same coal.
20380. Q You mean that if you take coal out of another part of the same, and take samples from it, you get less hydrocarbon? A. Yes.
20381. Mr. Bruce Smith. Q Mr. Hadden took representative parts of the whole of the same? If he had taken particular portions of the dust it would have brought out a different average.
20382. Witness. A. Different portions of the same are more brittle than others, and they crumble more easily. It may be that the bulk of the dust is the mine is from those seams; if that is so, it has an important bearing on Mr. Hadden's analysis.
20383. Mr. Bruce Smith. Q Just so.
20384. Mr. Robinson. A. Any small proportion of the dust plays a part in the explosion. It may be almost unperceptible dust, and it might have been contained in a pocket here and there.
20385. Mr. Bruce Smith. Q Mr. Hadden took it as he considered it volatile matter in the dust. If he had taken other portions of coal dust he might have got 50 per cent, and that would mean 90 per cent, instead of 1 per cent, as he reported.
20386. Mr. Robinson. A. I do not think you could carry it to any such extreme.
20387. Mr. Nichols. Q Have you any knowledge of dusts made up of different parts of the coal containing high hydrocarbon? A. I wanted to ask some volatile tests, and these showed that there were higher results in some portions of the coal than in others.
20388. Q Was there much difference? A. I forgot, but I know that, in Newcastle also, the more highly bituminous the coal, the higher the results which we get in the laboratory.
20389. Mr. Robinson. A. There is no doubt that different seams vary in composition.
20390. Mr. Nichols. Q I do not want to know how much volatile matter there was originally in the dust, if the test was intense enough to burn the bitumen, but it was intense enough to extract the whole of the volatile matter from the coal dust, and not to leave the percentage which Mr. Hadden found? A. Not necessarily.
20391. Q Can you burn bitumen at a low temperature? A. Yes, you can burn bitumen at a low flame temperature. You can burn it at the flame temperature of a candle; but you cannot burn coal unless you have considerable heat.
20392. Q Is there bitumen dust with heat, apart from flame, it must be there for some time, and the heat is up to a certain degree. If the lighter dusts were burnt with heat, would not the same degree of heat have extracted the whole of the volatile matter from the dust? A. No.
20393. Q Do you say that the lighter dusts with heat, apart from flame, was burnt, and got the dust was not affected, and most of the volatile matter extracted? A. It is possible for the lighter dusts to have been burnt by the explosion of heat, but to extract all the volatile carbon out of the dust in the atmosphere would require a higher temperature.
20394. Mr. Robinson. Q Was not the lighter dust of a tarry description? A. Yes.
20395. Q Some of the tarry dust might ignite at a low flame temperature. A. Some of it is easily ignited.
20396. Q The tarry matter would be ignited, on that lighter dust at a low temperature, and that might bring about the burning of the heavier stuff? A. It might be possible, it is hard to say.
20397. Q The first thing would be the ignition of the tarry matter, and afterwards of the dust itself? A. Yes.
20398. Mr. Nichols. Q And then you would have a flame that would propagate in other direction? A. You might have a flame but it does not follow that it would propagate in other direction.
20399. Q I am just then to you. Your theory assumes that the heat was such at the first light spring from the coal as to destroy the coal dust? A. You are not correct. There was sufficient heat to get the initial ignition of the coal dust, but it does not follow that there was destruction.
20400. Q Do I understand that the evidence of force which might be observed at Powell's or at Powell's flat, or other remote places, would arise from the explosion of the dust as it went along? A. There was action by force.
20401. Q Take the evidence of force take having been blown off the ends at Powell's. What I want to know is—would the force that was exerted there be force arising from the explosion of coal dust which might be in the vicinity? A. No, not in the vicinity.
20402. Q Then it might come along to the flat? A. I explained the moving over of the tale by the flame spreading.
20403. Q I want to know whether the force exerted was force that came from the initial place. [He answers.]
20404. Q I suppose it might have come from your other question? A. You asked me that afternoon how many explosions there might be, and you ran up a contrary theory. I do not know. But supposing your own theory as being correct—you have no valid opinion at that point, and small quantities of coal dust in the road—the gases present and the oxygen, might cause a second explosion.
20405. Q Listen to that—

The combustion of gaseous hydrocarbon at a low end at the moment of their explosion, requires more mechanical force than is available in the burning of a gas jet, namely, the isolated and solitary propagation of carbon over the field of flame would be an incomplete gas and an incomplete explosion, as indicated with it.

20406. Q Do you agree with that? A. It is a very complicated question.

20407. Mr. Hadden. Mr. Sellers, have you suggested the hypothesis that the unburned hydrogen gases off by the dust exploded, but he says that the gas being so evolved amounts to the gas in the breathing—

20408. [At this stage the further examination of the witness was postponed.]

20409. [Mr. Bruce Smith put in the correspondence which had passed between the Mines Department and Mr. William Rogers, Manager of the Mount Krishna Colliery, and it was marked Exhibit 42.]



20114 Mr. Bruce Smith also brought up the correspondence which took place over the ventilation of the Cymmer Colliery, and read the following extract from the report of Mr. James Hagan, the Inspector of the colliery, dated the 15th of September, 1930:—

20115 "I regret I am unable to state that he was now quoted, that the statement, they had taken the air with was in fact, and did not give a true statement, and in fact I believe that Wynn, the other chief inspector, of the case."

20116 The Inspector also stated that he had much pleasure in saying that he found the ventilation a satisfactory state throughout the colliery. [The correspondence was marked Exhibit 42.]

20117 [The Commission at 5.15 p.m. adjourned until 2 o'clock the following day.]

# WEDNESDAY, 23 FEBRUARY, 1932—2 p.m.

20118 [The Commission sat at the Supreme Court, King Street, Sydney.]

## Present:

20119 C. E. R. MURRAY, Esq., D.J.F. (President).

20120 D. A. W. ROBERTSON, Esq., Commissioner. | D. RITCHIE, Esq., Commissioner

20121 Mr. Bruce Smith, Barrister-at-Law, instructed by Mr. Wood, Crown Solicitor's Office, appeared on behalf of the Crown.

20122 Mr. A. A. Atkinson, Chief Inspector of Coal mines, assisted Mr. Bruce Smith.

20123 Mr. A. A. Lynght, Solicitor, appeared on behalf of:—

- (a) the representatives of deceased miners, widows, &c. (victims of the explosion);
- (b) the employers of the Mount Kembla Colliery (miners, widows, &c.); and
- (c) the Illawarra Colliery Employers' Association (the Southern Mines' Union).

20124 Mr. C. O. Wade, Barrister-at-Law, instructed by Messrs. Cusack and Barry, appeared on behalf of the Mount Kembla Coal and Oil Company (Proprietors of the Mount Kembla Mine).

20125 (Mr. J. Garbutt, Secretary to the Commission, was present to take shorthand notes of the evidence and proceedings.)

20126 Mr. BUNNAY SKEADNER was sworn, and examined as under:—

20127 Examination by Mr. Wade:—

20128 Q What is your name? A Bunnay Skeadner.

20129 Q What are you at present? A Manager of Wren Wellhead Colliery.

20130 Q How long have you been there? A I have been resident Manager there about three years now.

20131 Q Have you been colliery Manager elsewhere? A I have been at Waratah and Nylghergh.

20132 Q Then it is in the Newcastle district? A Yes, and a short time in the Southern district, about eighteen months at Oriskany Colliery, in the north.

20133 Q Anywhere else? A No. Those are the only places that I have been in charge of.

20134 Q And what is your usual working experience? A I have been altogether connected with mining now for twenty-eight years.

20135 Q Did you have any experience as footwall below you came here? A Yes.

20136 Q How many years did you have in Scotland? A About twelve years.

20137 Q Apart from Mount Kembla, you have actually seen a pit after an underground gas and coal-dust explosion? A I have.

20138 Q Where was that and when? A Duffry, in Scotland.

20139 Q That is here or five years ago now? A Yes.

20140 Q I want you to describe the conditions of the pit as you saw it after you got down. How long did you get there after the actual occurrence of explosion at Duffry? A I was there immediately it about an hour after the explosion occurred. It took about three or four hours to get a rope on and things got right.

20141 Q Before you got down the shaft? A Yes.

20142 Q Had the ventilation been damaged? A Yes. On our first attempt we only got half way down and had to retire.

20143 Q Half way down what? A Half way down the shaft—and had to come back again.

20144 Q Owing to what? A Owing to the after-damp. We met the after-damp about half way down. We had to return up to the surface then, and they stopped the ventilating apparatus, the fan, for instance. The main air drift from the upper shaft to the fan was blocked about a good deal, and we could not get a great deal of air. We closed that up, and it seems as we got first down we were able to get to the bottom.

20145 Q What was it like when you got down to the pit bottom, in respect of the temperature? A It was pretty hot; the temperature was pretty high, and immediately we went to get away from the gas bottom we discovered to a great many places coal dust, burning, hot and dust, especially near the pit bottom in the beds.

20146 Q Lying where? A Lying on the face, and in other places, on the props, burning. The coal dust was quite hot to the touch.

20147 Q First of all, with regard to the presence of solid dust, did you see any of that? A Yes.

20148 Q Just tell me? A Not so much on my first visit as on my second.

20149 Q Yes, Bruce Smith? This evidence, on the face of it, is not clearly satisfactorily now, because an amount of the Duffry explosion really has no application to the case, when it is put in this way. "I visited Kembla, and I found the opinion that it did in fact not take place from certain causes. I found that opinion because I visited the Duffry Mine after an underground explosion from gas and coal dust."

20150 Mr. Wade: If you give me leave, I will come to that.



Witness—D. McElwaine, in February, 1905.

20433. *Mr. Bruce Smith* | I know, but it is a matter of the way it appears on the notes.

20434. *Mr. Bruce* | That does not matter in this case.

20435. *Mr. Bruce Smith* | I do not object to it. It is a very fair comparison, so long as it does not run into too much detail.

20437. *Mr. Webb* | Q Now I would ask you to tell us the different parts of the mine in which you saw colored dust, first of all, at Daily? You saw you have got many roads, pillars, headings, and so on, is that right?

20438. *Q* Just tell us where it was? *A* Everywhere that the blast had swept along, you would always find the colored dust, either on the timbers or the slope, almost everywhere in the track of the driven three.

20439. *Mr. Bruce* | Q Liked dust? *A* Yes, colored dust.

20440. *Mr. Webb* | Q And what thickness would that be? Takes prep, for instance, how thick would the colored dust be upon the props? *A* Varies considerably.

20441. *Q* From where to what? *A* I don't say you would find it over an eighth thick.

20442. *Q* An eighth of what? *A* An eighth of an inch thick.

20443. *Q* In other parts? *A* In other parts, slightly more, and other parts less.

20444. *Q* How would it be on the prop—what part of the prop. The top or the bottom, or the middle, or what? *A* Right near the base, say in between you could get colored dust, on the main road especially.

20445. *Q* Would it be on one side of the prop, or both sides, or what? *A* Well, on a good many props it was all round it. On others it was just immediately in the face of the driven three of the track.

20446. *Q* You said you also saw colored dust on the slope? *A* Yes.

20447. *Q* How would that be? *A* They would be standing on the main road, I suppose, about 100 yards from the pit bottom.

20448. *Q* And how thick was that colored dust on the slope? *A* I could not say the thickness there, but I remember just rubbing the colored dust on the edge of the step, and rubbing it off with my hand.

20449. *Q* Did you see timber in more than one mine on the slope? *A* Yes, I noticed it more particularly at the pit bottom where the timbers were broken. Timbers that had been newly knives were practically covered with red dust.

20450. *Mr. Robinson* | Q Which pit do you mean? *A* The main pit, the diagonal pit.

20451. *Q* The working shaft? *A* Yes.

20452. *Mr. Webb* | Q When you speak of the timbers that had been knives, do you mean the timbers that had supported the roof? *A* Yes, they were 12-in. timbers, 12 in. square.

20453. *Mr. Bruce* | Q These were pine? *A* No, they were all hard wood, heavy timber, evidently taken out of the bank.

20454. *Mr. Webb* | Q Did you see any signs of charring? *A* The whole of the dust was charred—practically the whole of it.

20455. *Q* Did you see any clearing of timber or wood? *A* Oh yes, slightly.

20456. *Q* What timber would that be? *A* The main timber that I referred to at the pit bottom, especially at the pump chamber.

20457. *Q* That is close to the pit bottom? *A* It was immediately in the pit bottom.

20458. *Q* You told us that where you first went down you found coal dust having as hardy come to the pit bottom? *A* No, that was my second visit down.

20459. *Q* You went on farther about the number of times you visited at present, but did you see that day where the bodies close to the pit bottom? *A* No. In the other parts that we visited the main roads were all killed, and you could not see the coal dust that was toward them, but we found, in several places, where it probably was burning, because we had small fires under these hills.

20460. *Q* Daily is not a very big mine? *A* No, it was not a large mine at that time.

20461. *Q* Could you say any what extent of the coal workings at that time you saw the indications of the colored dust, would there be any part of the mine left out? *A* I was not on the right hand side, on the open shaft side, I was not in that district at all, but in the other part you could find traces, more or less, through the whole of that part of the mine.

20462. *Q* The left-hand side? *A* Yes.

20463. *Q* That would be about half the mine? *A* About half the mine. With regard to the right-hand side, the night I went there to go on that side of the pit it was found to be all right and was then worked off.

20464. *Q* Now let us come to Kenville, what did you first notice at Kenville? *A* The Saturday after the disaster.

20465. *Q* That would be the end of August? *A* Yes.

20466. *Q* And when were you first made the pit—was it that night? *A* I suppose it would be about 2 o'clock in the afternoon when we went in. When I say 2 o'clock I mean, roughly, any time from half past 1 to half past 3.

20467. *Q* I suppose you were helping in the rescue work first of all, were you not? *A* Yes.

20468. *Q* Do you remember how many times you made into the pit altogether? *A* I was in the pit every day from day up till the following Friday.

20469. *Q* Then was during the week? *A* Yes, including Sunday.

20470. *Q* And did you make observations pointed as to the signs of fires, for the purpose of leaving this matter if you could? *A* After the Monday morning only. Not on much on the Saturday and Sunday, because we were more or less rescue work then, getting out the timbers, but on the Monday we went in for this purpose.

20471. *Q* Do you remember going up to the face of No. 1 heading on that Saturday night? *A* Yes.

20472. *Q* The end of August? *A* Yes.

20473. *Q* Did you remember whom you went with? *A* With Mr. Atkinson, Mr. Hamilton, Morrison, and two other men, I do not remember all the names.

20474. *Q* Was there any discussion about going there before you actually went up? *A* Yes.

20475. *Q* What was that? *A* Well, we talked over the advisability of going into the place. Morrison, of course, said that he had a particular manner—that we had to call in there, and I remember Mr. Robertson saying to him to go to that place and see if we could find a trace of gas. While we were up on that point, I mentioned to Mr. Atkinson as to Mr. Hamilton, or both—I do not remember which—that I did not think it was



was able to go there, seeing that the condition was all disarranged, and if gas was to be found at all, it was sure to be found there, and it would be better to try there at all, seeing that the condition was not off from the house, or words to that effect.

12476. Q. Who was it called you to go to? A. Mr. McGeehan said, "All right, we will go," or something to that effect. We went up.

12477. Q. Where was the condition cut off at that time? A. From the 10th left right away back to the outside.

12478. Q. Did you make an examination? A. Yes. I went for gas with the hydrogen flame, and I think, if I remember correctly, I got it out there.

12479. Mr. Bruce Smith. Q. Was it up to the face? A. No, not quite the face—the cut-through.

12480. Mr. Smith. Q. Which one? A. The one nearest the face.

12481. Mr. Wade. Q. Can you say, from your experience, whether the fact of gas being there in any indication, under these circumstances, that it was gas given off from the face? A. I could not say what gas it was. The gas gave an indication in the flame, but I would not like to say it was fire-damp. It gave a blue color in the flame. It may have been fire-damp, and it may have been carbon monoxide.

12482. Mr. McGeehan. Q. If it were a half per cent of carbon monoxide, you would know by its effect on yourself? A. Yes.

12483. Mr. Bruce Smith. Q. Did you know? A. We did not feel any serious effects.

12484. Mr. McGeehan. Q. Did it affect you? A. No. Well, you would get a cup with only 10 per cent of carbon monoxide, and I doubt whether you would feel it in your body.

12485. Mr. Wade. Q. How long were you there, do you think? A. Just the time of taking the reading.

12486. Mr. Bruce Smith. Q. You did not advance? A. No, we were back.

12487. Mr. Wade. Q. Now, from the mark of your examination and observation in Knoxville, just tell us where it was you remember finding any colored dust or anything like colored dust? A. We found a little near the face of these same two headings on the 10th, as a prop in the back heading.

12488. Q. On what part of the prop? A. I do not remember now whether it was facing the cut-through or facing the side.

12489. Q. On the top or the lower part? A. Near the top.

12490. Q. Did it extend lower down? A. No, it was only at one part that I saw the dust that on the prop.

12491. Q. How did you come to the conclusion that that was colored dust? Did you say colored dust or coal-dust? A. It was colored dust. It seemed to be heated dust.

12492. Q. How did you tell that? A. It seemed to be colored—or though it had been under heat.

12493. Q. Did you tell by the feel or the look? A. I put my finger on it.

12494. Mr. McGeehan. Q. Did you go by the smell at all? A. No.

12495. Mr. Bruce Smith. Q. Did you say it was hot or warm? A. Well, it was hot, you could not say it was hot, not too hot. The air was what we considered fair under the conditions.

12496. Q. I thought you were speaking of the dust? A. Oh, no, that was on the 10th.

12497. Mr. Wade. Q. Do you remember finding it anywhere else—any signs that indicated it colored dust? A. No, I do not remember seeing none. Yes, I think there was a few particles of colored dust found in the cut-through to the left farther down, near where there had been a fire and where the heading was back.

12498. Mr. Bruce Smith. Q. Did you take notes in your pocket book at all? A. Yes. I did not take the whole of the notes because, for instance, in the taking of readings I was simply reading and the others were looking, and I was left without a great many notes of that kind for the sake of getting through quickly.

12499. Mr. Wade. Q. Now, speaking generally, is there any resemblance in the conditions at Knoxville to the conditions you saw at Dudley after the disaster? A. You mean as far as structure is concerned, or what?

12500. Q. Take the destruction, if you like, that of all? A. There was much less destruction at Knoxville than there was at Dudley, so far as the state of the mine is concerned, and if one in the pit was over-particular road, the resemblance was great. I could not see signs of flame or burning anywhere.

12501. Q. What about colored dust? Was there any resemblance between the appearance of the colored dust you saw in the two mines?

12502. Mr. Bruce Smith. Would it not be better to let him tell us what struck him, instead of answering to what is put to him?

12503. Mr. Wade. I ask him, first of all, is there any resemblance or not?

12504. Mr. McGeehan. Q. Did you compare the appearance of the color dust in the two mines? A. I could not compare the two except from memory.

12505. Q. But, bearing in mind what the appearance of the dust at Dudley was, did you make any comparison with the dust at Knoxville at the time? A. No, I did not, simply on the fact, while I was taking through it, and afterwards, but the colored dust at Dudley was being primarily hard into a crust, you could get it off on paper 2 inches long square, 2 inches square, but at Knoxville it was perfectly fine, a little round, but not in the same extent as at Dudley.

12506. Mr. Bruce Smith. I believe, your Honor, that the only reason why this evidence can be given at all is that Mr. McGeehan may have made some deductions as to the nature of the Knoxville accident from the difference which he observed in the two mines.

12507. Mr. Wade. If you would give us those, I would bring that out.

12508. Mr. McGeehan. If I might suggest to you, Mr. Bruce Smith, without interrupting you, that the Commissioner has also drew deductions. If Mr. McGeehan, for instance, in a case who does not see to draw deductions, or if his deductions were adopted at, still in fact, from which we could draw deductions, might be material, and would be material in certain cases.

12509. Mr. Bruce Smith. But we are to be guided to some extent by the first principles of evidence, and it would be better for the witness to give as the evidence himself of the principal differences between the phenomena of the two explosions.

12510. Mr. McGeehan. That is what he is doing.

12511. Mr. Bruce Smith. No. Mr. Wade is asking him about particular things.



Witness—Dr. Macfarlane, 25 February 1966

20517. *Mr. Jones* [He is answering my questions, now. I took the examination out of the hands of Mr Wade, and asked him what was exactly in his mind, as his presentation, so that there would not be any suggestion made to him, and now he has described it exactly, and I think this evidence is taken down of what, in his modification, the difference was.
20517. *Q* There was a difference? *A* Yes.
20518. *Q* There is a difference in the coal, is there not? Did you compare the coal for the purpose of noting the difference in the end coal? *A* No, I did not do that. But I think the one is almost as satisfactory to him as the other. I think there is very little difference, so far as that is concerned—so far as the analysis of the coal is concerned.
20519. *Q* So far as their brightness nature is concerned, what do you say? *A* There might be a slight difference, but I do not think there would be such a difference in the nature of the coal to such an extent that you could take it off 2 inches square, while the other would rub away with your finger perhaps in taking it off.
20520. *Mr. Justice* [Is there anything in the nature of the coal that would cause the one to run together more than the other? *A* I think so, there is no doubt that there is, but I do not think under a heat of that kind it would give any difference.
20521. *Mr. Johnston* [Is it not the Newcastle coal, of which Dudley is a type, essentially a caking coal? *A* Yes.
20522. *Q* Now, can you say that of the southern? *A* No, it is not such a good caking coal as the southern coal.
20523. *Q* Is it not a fact that the Dudley coal contains a very large percentage of volatile hydrocarbons? *A* Yes.
20524. *Q* What would you say, 50 or 60 per cent? *A* No, I could not say what the Dudley analysis was.
20525. *Q* You know the average composition of Newcastle coal, it contains probably 50 per cent? *A* Yes, I know more of that contains that.
20526. *Q* And the Kumbia coal 24 per cent. Would not that make a very material difference in respect of its tendency to caking by being exposed to heat? *A* No doubt it would make a difference, yes, certainly.
20527. *Q* Briefly speaking, Newcastle coal is a caking coal, and the southern coal is not? *A* My impression of the two days exposed to the heat in the one case it has been exposed to flame, and in the other case it has not been exposed to flame. That is how I would like to put it.
20528. *Q* Which was exposed to flame? *A* Dudley was exposed to flame; and, in my opinion, the dust in Kumbia was not exposed to flame. It was exposed to a certain heat, but I would not like to say that there had ever been flame there.
20529. *Q* But the same heat that would bring about complete caking in the case of Dudley might not have the same effect in the case of Kumbia dust? *A* It might not.
20530. *Q* The same heat? *A* I would not be prepared to say that.
20531. *Q* But you are aware that, even in a common house fire, the Newcastle coal sticks together in a pretty mass before there is any actual flame passing through the top? *A* Yes, but it is of a soft nature when it does stick. You can almost take it and separate it up with your finger and thumb.
20532. *Q* Which? *A* The Newcastle coal.
20533. *Q* Any Newcastle coal, if you put it on an ordinary domestic fire, has a tendency to caking together before there is any great heat near it? *A* Yes.
20534. *Q* Could you get any southern coal to caking together in a domestic fire? *A* I could not say that. I have not seen it tested in that way.
20535. *Q* So you see there is a very broad difference in the nature of the two coals in respect to the tendency to caking? *A* There is no doubt there is, but there is a difference in the quality of the coal anterior to caking.
20536. *Q* Is not the southern coal essentially a steam coal, and the Newcastle coal essentially a gas coal? *A* Well, it is a light bituminous coal; but it is not all gas coal. If you go to the Goss reservoir, then I will say it is a gas coal.
20537. *Q* Here is a report of the Department of Mines showing that the average percentage of volatile hydrocarbons in the Dudley coal is from 50.98 to 57.63. Now, in the Kumbia coal, the volatile hydrocarbons average about 24 per cent, so there are 30 per cent more volatile hydrocarbons in the Dudley coal than in the Kumbia? *A* Oh, there is a great difference, no doubt.
20538. *Q* (At this stage Mr. W. B. Pratt, Assistant Undersecretary to the Commission, attended to take the notes of the evidence and proceedings.)
20539. *Q* In addition, the Kumbia coal contains more ash? *A* I did not go into the comparative analysis of the coal as it is showing at my residence.
20540. *Mr. Wade* [You have been speaking now of the color in the dust and the difference in the end coal? *A* Yes.
20541. *Q* I want you to indicate where the dust is most numerous? *A* Do you mean the Kumbia? *A* Yes.
20542. *Q* In which colliery is it more numerous? *A* I only saw two lots in Kumbia, but in Dudley, every where you want, you could get sides of caked dust. In fact Kumbia was probably two from caked dust or from any signs of flame. I never saw any signs of flame, excepting in one particular place where there had been a fire.
20543. *Q* Was that in No. 1? *A* Yes.
20544. *Q* Did you see some fracture at the back heading? *A* There was a small piece of carbon at the end of the caving through there. It was very hard.
20545. *Q* When you say then, what do you mean? *A* It seemed to have been exposed to heat, and was torn off as if a certain force had been applied to it.
20546. *Q* How do you mean? *A* As if someone had struck it with something, and it was partly torn off.
20547. *Q* What was the condition of the fracture at the heading? *A* It seemed to have been exposed to heat.
20548. *Q* Could you describe it up? *A* Yes, you could describe it up quite easily.
20549. *Q* Would it break? *A* It did not break.
20550. *Mr. Justice* [You say that a part of it was torn? *A* Yes, the part that was exposed to heat.
20551. *Mr. Johnston* [Was it a large piece of fracture or ordinary tunnel stuff? *A* It was ordinary tunnel stuff.



20546 Jfo. Wade | Q Have you used latent prints yourself? A Yes, we have sometimes used it. We occasionally use a non-informative location.

Student Q: In what way? A: There are lead parts in it, so if some of it had been exposed to acid, it would have to retain half a dozen rolls of the same stuff. I would not put it up. It would merely hang the area around.

2009) @ Rayette there had been space on that back landing where the window was—wouldn't he know what do you think would have been the result? If it would have left traces, and if there had been some traces, he would have known. If there had been any, it would have left traces of the good dust on the wall.

20052. ♀ Happonia. Shave was 1 per roach of Eredasp at the turn of the back leading, and supposing

3. I would expect to find an explosion of gas. There would be flames of fire, and fire from the feet; and the hearse would be launched down, and probably burned.

30504. Q. Please add 1 per cent. of discount. A. It would help to narrow the issue. It would be rather

SS554 Mr. Wade Q Suppose that there was 1 per cent of fire-damp and coal dust, and the lights came on. That would make a much greater flame, and the lights would be all in one direction—from the face

00006 Q You would expect to find the force going out from the back heading 1. A Yes, from the last  
subtle response. Instead of that, the force has a rise in the opposite direction.

20053 Mr. Archer: Q From where? A From the Mt. Right W. post ridge.  
20054 Mr. Suberborn: Q Then we are to assume that the farm, in the first instance, went along?

52056. You asked how Mr. Wade was not the resident of Farm 30057—if the farm had gone the back

00401. 4th. Antelope 1. There would be disagreement with flame going edge.

32982. *Mr. Wade*] *Q* Which were the indications of ferns just now in the back heading? *A* None. I don't think there were any going. *Q* In the back heading there appeared to be very little fern anywhere. There were some heads in many places of ferns in some directions.

Q Do you remember seeing a bottle there?

00245. Q They had been used at the second cut through from the west, the 1 heading, at the heading.

signs of Jesus going away? A. No.

22466. Q Now, suppose there was a sufficient supply of gas in the rock surrounding the well, would you expect much flame there? A No doubt if there were gas around outcropping from the face, you'd see a good deal of flame there. The flames produced through the explosion there it would cause an explosion, and it would leave traces. The flames produced through the explosion

33947. Q Did you see anything to suggest that vegetation—that there was an explosion in the back  
 headline from the second on through to the fifth? A No. In my opinion no explosion took place. In fact

20245 *Mr. Aron Haskin:* Q. Do you mean that no explosion took place in the room? A. Yes.

of the backings, and the air current went round the main exit-through to the back heading. If there was gas extending back as far as the second exit-through from the tunnel, it would be carried right up to the main exit-through, and the air current would round the main exit-through to the back heading, and the air current would round the main exit-through to the back heading. If there was gas it would be carried right up to the main exit-through, and the air current would round the main exit-through to the back heading, and the air current would round the main exit-through to the back heading.

Q Now, what was the condition of the floor of the second landing entry of the 5th flight? A It

28071 Q Take the dust? A As to dust?

00:55:53 Q I am talking of the jig, where the ball is on edge of the 1st flight. A That was very free and loose, and it seemed as if there had been making a jig—there was a good deal of laughing then. There was

was real hard to be sure there.

29578 Q. Between the 4th flight test run the flight, the two main engine tests, and the 5th flight test run, did you have any other engine tests? A. No.

29579 Q. Did you change?

29580 Q. When you fired our R-1? A. When I walked along it, it was not.

20576 Q. *Admission* | 4. Did you stop it was all damp? A. *Frank*. There was a good amount of rain  
 20577 we when I walked along there.  
 20578 A. *Frank* | Q. What proposition of it would be wet? A. I think I may safely say half of it.

2002b, p. 200: For what lengths?  $\Delta$  From the 4th Right to the 6th Left, going 100% roughly speaking, should say half.

20079 ♀ The door was 2017 ♂ Yes, the door was 2018  
20080 ♀ Between the 4th Right and the 4th Left, what were the indications of force, were they indige-  
naries? ♂ Going indige

Q10: The distribution of form was all (slope)? A The distribution of form was all (slope).

**SCOTT:** ♀ Now supposing the gas had only got off the side flight, without any vapours, where do you think it would go to under ordinary conditions? A: It would run up with the intake air.

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Witness—D. McCauley 28 February 1937

- 20500 Q How would it get there? A If the gas came out of the 4th Right, and was not forced out —  
[Overruled]
- 20504 Mr. Moore? No one has suggested that the gas came out without any force at all. Mr. Ackerson has not suggested that the gas was expelled without any force.
- 20507 Mr. Frank? Mr. Ackerson said that the force was sufficient to drive the smoke out.
- 20508 Mr. Ackerson? A Velocity of 50 miles an hour will do that. The witness said that if the force came out without violence it would mix with the smoke air.
- 20510 Mr. Frank? I understood that both the smoke there were smoke, but I find that one is a witness and one is an intake.
- 20509 Mr. Ackerson? Q You withdrew that statement? A Yes.
- 20510 Mr. Frank? Q Supposing the gas got forced out with sufficient violence to knock out those nearby passengers? A Well it would mix with the smoke intake air at once.
- 20511 Q Now take the proposition that there is a body of inflammable gas only, resulting from the 4th Right to the 4th Left, do you know at what percentage of gas to air it would become inflammable? A Yes, very a body of inflammable gas.
- 20512 Q What is the lowest percentage at which it would become inflammable? A From 1 to 5, that would be the lowest.
- 20514 Q Do you mean that 1 per cent would be inflammable? A 5 per cent. I take the highest explosive point to be 1 to 9 and from that back to 1 to 5.
- 20515 Mr. Frank? Q Why do you put the one at 1? A Say a foot of one to 9 feet of the other—or 1 foot of one gas to 5 of another. That would be 20 per cent of gas.
- 20516 Mr. Ackerson? I understood him. From 1 per cent to 5 per cent would be inflammable.
- 20517 Mr. Frank? I want to say that the gas mixed with the there the quantity of air is the most inflammable.
- 20518 Mr. Frank? That is approximately 11 per cent.
- 20519 Mr. Frank? Q Do you mean that 11 per cent of gas in the air is highly explosive, and that the inflammable proportion is 5 per cent? A Yes, it is the most thing.
- 20520 Mr. Frank? Q Do you say from 5 to 11 per cent? A I say five times its own quantity.
- 20521 Q You say that at 5 per cent it reaches its highest inflammable state? A Yes.
- 20522 Q What is its lowest inflammable state? A 5 per cent.
- 20523 Q Will it explode there? A I take it that it might be exploded. The higher you get above 5 you get less and less, and below 5 you get less and less explosive gas.
- 20524 Q Between 5 and 11 per cent it is explosive, but at 5 it is most explosive? A Some times it is most explosive. Then side it back, from 5 to 5 it will explode. If you take it above from 14 to 25, there will be no such gas that it will not explode at all.
- 20525 Mr. Frank? Q Do you know how many cubic feet of the deep there would be if there were 5 per cent between the 4th Right and the 4th Left? A I should want to know the area. It would be a very large area, it would cause a lot of damage if it exploded.
- 20526 Q You would expect a large flame to start with it if ignited as Morrison's flame? A Yes.
- 20527 Q Would you expect to find any substance of the distance to which it had gone? A It would have gone onwards from that point.
- 20528 Mr. Frank? Q What would have gone onwards? A The force of the explosion smoke had ignited. I was wrong if it would have left traces. I say a great many traces. There would be a great body of gas in that area.
- 20529 Q You do not think it possible for a falling mass to expel the whole of the gas before the explosion took place, and for no traces to be left? A You mean expel it from the 4th Right?
- 20530 Q Yes. A If it had been expelled from there and back, and with force, the lights would have been blown out.
- 20531 Q You would not have any traces? A You would see traces, whether it was gas, or whatever it was. The traces would be there, whether it was gas, wood, or water, if it came left at all.
- 20532 Q If by the falling mass there the whole of the gas was expelled before the explosion, would you find any indications in the 4th Right? A Presumably that would be the seat of the explosion, as the flame would come from there. It would have to go slowly to catch sight. If it was expelled very suddenly, the flame would put out the light.
- 20533 Q It is said that the light that lit the gas was some 50 yards away from the seat or the centre of the gas? A Then you must assume that the gas came slowly, otherwise it would not have come through the screen.
- 20534 Q It might have come through the screen, and having come through there, it might afterwards have come on slowly? A But even the flame of the air would come on slowly.
- 20535 Q The force of the screen has been said away before it reached that light, and not have been sufficient to put that light out? A Take of the ground that that was so. There must be traces in the 4th Right if there was an explosion there. There would be some timber like wood, or heavy, and we should have seen tracks of flame there; but there are no traces of flame to be seen. I must think that gas came out of there in either large or small quantities, otherwise there would have been indications to show that there had been flame.
- 20536 Mr. Frank? Q Supposing it lit and ran back to the 4th Right junction with the 4th road, and that was the centre of the explosion, would you then expect to find any signs of explosion in the 4th Left? A Certainly.
- 20537 Q Did you see any signs in the 4th Right roadway? A No, I saw signs of force, but no signs of flame.
- 20538 Q Did you examine the signs and have that support the roof in the 4th Right? A Yes.
- 20539 Q Did you see any signs of flame or explosion in them? A No signs whatever.
- 20540 Q Did you notice the smoke? A Yes.
- 20541 Q Did you see any indications of flame on there? A No.
- 20542 Q Now, let us come to the 4th Right roadway and go up to the guard sign. First of all, tell us what you saw there, what indications of force and in what directions? A Yes. Well, there was some timber



timber drove in to the edge of the gash—I do not know what it had been, it looked like ash shingles. They were forced partly into the roadway, as if they force had been exerted on them—a force towards the gutter of the road and an outward force. There is no doubt that the timber had been inside the gash before.

15043. *Mr. Robertson* | Q. What did you say? A. I spoke of some timber there, and said that it seemed to have been forced towards the centre of the road, and outwards towards the backing road.

15044. *Mr. Walker* | Q. Were they forced toward each other? A. Towards each other and outwards at the same time.

15045. *Q.* Have you any more of it? A. No, but I remember it. *Mr. Robertson* was there at the time.

15046. *Mr. Robertson* | I do not remember it.

15047. *Mr. Wade* | Q. You would draw a sketch showing the mouth of the gash, the travelling road, No. 1 backing road, and the 4th Right road? A. Yes.

15048. *Q.* The shingles went close to the gash edge? A. Yes, I saw some shingles lying on that place.

15049. *Q.* Where did they come from? A. I understood that they were forced together.

15050. *Q.* There was one prop which was noticed before—whereabouts was that? A. It was on the right-hand side.

15051. *Q.* At what angle was it lying? A. It would be lying towards 4 or 5 inches off the plumb.

15052. *Q.* Which would be the space between the top of the prop and the roof, if the prop were upright? A. 5 or 10 inches.

15053. *Q.* Can you account for that prop being tipped over? A. Only in one way. It was at one time against the roof, and the stone fell out and pushed it over.

15054. *Q.* What was there round it on the day? A. A lot of rubble.

15055. *Q.* There was a lot of rubble and dirt lying there? A. Yes.

15056. *Q.* Do you mean that that might have been there before the day of the disaster? A. I suppose so. It was the dirt which was holding the prop in a leaning position.

15057. *Mr. Robertson* | Q. What position? A. It would have fallen by the own weight otherwise. I remember taking on one of the props. That is what drew my attention to them, and in that way the matter was impressed on my mind. I think if you cut your mind back to the Thursday or Friday when we were there, you will remember it, and I think I gave the same explanation then as I am giving now.

15058. *Q.* What was that? A. About the stone pushing the prop in.

15059. *Q.* Did you notice anything else—any rock or rubble towards the junction of the Main Right eye road? A. There was rubble in the ridge corner at the junction of the 4th right and the main highway.

15060. *Mr. Wade* | Q. Do you remember in the corner of your mind to the stone holding the body of a boy called Walker? A. We found him on the Sunday.

15061. *Q.* Whereabouts? A. On the outside of the 2nd Right eye road.

15062. *Q.* Where was he? A. He was lying in a dip under a fall.

15063. *Q.* When did you notice that his appearance? Where were any signs of burning? A. No, none at all.

15064. *Q.* Was he damaged at all—were any limbs broken? A. Oh, yes, he was knocked about very much. Half his head was off. His left arm was hanging over the edge, and I could examine that thoroughly. There were no signs of burning.

15065. *Q.* Was he seen here? A. Yes, his left arm was in it.

15066. *Q.* I want to ask you what is your explanation of the disaster? Where do you say the force came from? A. My opinion is, from what I have seen of the direction of force, that it came from the 4th Right, as in the main road and divided, one part going in the right and the other to the left. One part would go to the face of No. 1, and the other part would go out of the tunnel.

15067. *Q.* Would you say, from what you saw, that the force was great or slight, or very great? A. It must have been a great force—there is no doubt about that, according to the damage done. The air came out with great velocity.

15068. *Q.* When do you think that the damage on the outside side of the 4th Right was done? A. It was all done at one time. The whole thing was only a matter of seconds.

15069. *Q.* Doing damage and injury? A. Yes, the whole of the damage done would be a matter of a very few seconds.

15070. *Q.* What do you say about the conditions at the face of No. 1 backing—the conditions of back-splash of air? A. I think the back there was through the compression of the air on the floor.

15071. *Q.* Do you mean the great force from No. 1 Right? A. Right. It was simply a great blast of wind. The force divided itself. It compressed the air, and this would raise the temperature to a great extent. If these men were caught at all, it would be the result of trapping them, because the air would be very hot.

15072. *Mr. Robertson* | Q. Do you think that there was air hot before the air reached the floor? A. I say the back would be greater than—the greatest amount of pressure would be there. The heat would be caused by the compression at the face of No. 1 backing.

15073. *Q.* Was there no heat when this blast occurred No. 1 main road—was there no heat anywhere else before it reached there? A. There may have been a certain temperature before the air was expelled, but the greatest amount of heat would be there through compression against the coal face and getting a fresh supply of oxygen. It is going out—it gets a fresh outlet. Coming to the face it could not get any outlet.

15074. *Q.* Was there no heat sufficient to have anything stuff it reached that point? A. There were no signs of it.

15075. *Q.* Was it after your opinion if you are told the fact that men were burned outside and inside of that point, and that horses had been burnt? A. Men may have been caught from that hot atmosphere, but they may have walked clear that. It is hard to say where men come from.

15076. *Q.* If the bodies generally were black, and the hair taken off, the tests of, and so on—could it have been worked for after that? A. He may have been played some trickery, but he could not walk for.

15077. *Q.* Will that satisfy your terms. It is questionable that bodies were found inside and outside severely burned? A. I cannot say that.

15078. *Mr. Wade* | Q. Is it your theory that there was no combustion anywhere? A. There is no sign of any actual complete combustion. There has been partial combustion at the face. I do not think there has been any complete combustion.



Witness—Dr. McElroy, 22 February, 1933.

20452. Q Is it through the pressure of so much partial combustion that you explain the presence of carbon monoxide? A It may be so.
20453. Dr. Eshelby. Q Do you say that the greater compression was at the face of the leading? A Yes.
20454. Q Would that be the first solid body? A It would be the first solid step.
20455. Q But you know that there were solid steps before you came to it? A That is simply the driving point. The air came out and turned to the right and to the left. After it went to the face it could get no further.
20456. Q Do you say that the force which came out of the 4th Right would give a higher temperature at the back leading than it would give at the 5th Right? A There was, I think, the greatest compression there, where you had the highest compression, that is you had the greatest heat.
20457. Dr. Eshelby. Q We have now the center of the expansion moved up to the face of the back leading. I cannot comprehend it.
20458. Dr. Eshelby. Q How do you account for the burning of the bodies outside and inside, and also the burning of the horses? A I cannot account for it.
20459. Dr. Eshelby. Q Do you know that one was burnt at the tunnel mouth? A No.
20460. Dr. Eshelby. Q Do you know that there was a boy completely decimated of clothing about 100 yards further away than the boy Walker was found burnt? A If it was gas from the 4th Right that burnt him, the boy Walker would be burnt.
20461. Q Another boy was burnt 100 yards further on.
20462. Dr. Eshelby. Q Do you mean before? A Yes.
20463. Dr. Eshelby. Q Yes.
20464. Dr. Eshelby. Q He was not burnt.
20465. Dr. Eshelby. Q Now, I saw him myself. There was not a bit of hair on his body. There was a man named Parrot. There was no question as to his hair being burnt, and charred. There was no doubt about a horse at the 4th Left—there was no question about that horse being burnt all over.
20466. Dr. Eshelby. Q I know nothing about that. We have no evidence about horses being burnt.
20467. Dr. Eshelby. Q The evidence is clear about Parrot, about the horse, and about Adams.
20468. Dr. Eshelby. Q I quite admit that you got indications of burning and burning without heat.
20469. Dr. Eshelby. Q As to whether it was flame or heat I am not saying.
20470. Dr. Eshelby. Q I think there were indications of burning on Adams and Morrison. However, said he had a scorching on the back of his arm, but there was no burning.
20471. Dr. Eshelby. Q The explosion had blown out when it had two.
20472. Dr. Eshelby. Q I think Morrison was only 20 yards away from the main flame.
20473. Dr. Eshelby. Q Yes, I think that he was a long way off.
20474. Dr. Eshelby. Q What I should like to say is this—that although your theory is there was a terrific compression which caused this inflation—although you say there were no signs of burning at the end of the compression—although there were no signs of burning at the first point where the inflating met an obstacle—yet you say it turned to an inside air, ran backwards for 100 yards to the face, and then for the first time caused compression which generated heat enough to cause this burning. I think that that theory is utterly untenable, and the other Commission are of the same opinion—it is purely ridiculous, and it is an apparent waste of time to try and force such a theory upon us. We must draw the line somewhere.
20475. Dr. Bruce Smith. Q That is not Mr. Eshelby's theory. He not only admitted that there were no dust explosions, but they were the main element in the whole theory.
20476. Dr. Eshelby. Q That is so.
20477. Dr. Bruce Smith. Q The witness says that there was no explosion at all. He said that is correct to a question of mine. I got lost to my that there was no explosion in the mine.
20478. Dr. Eshelby. Q Do you know whether there was any outflow to show heat at the stack of steel or?
20479. Dr. Eshelby. Q I should like to say that the face of the 4th Right was the highest point. You have no atmosphere there which you have not got to any other part of the mine. You said an atmosphere that you move oxygen through the out-throw. The air supplied from the 4th Right was mostly oxygen and gas, and in this way you get no large signs of heat, but the atmosphere coming from the 4th Right would be hot.
20480. Q What do you mean by hot? A Not high enough to cause flame. It may be anything from 90 to 100 degrees, up to 100 degrees.
20481. Dr. Eshelby. Q Was not the compression of the air at that point sufficient to raise it to a point high enough to ignite coal dust? A At the leading it might be—at the face of the leading perhaps, it was.
20482. Q Let us start from the beginning—what would be the temperature of that air coming out from the 4th Right? A I could not possibly say what the temperature would be. I assume it would be higher than the ordinary air.
20483. Q How much air? A I could not tell you that. I could only assume that it was higher than the temperature because it was lying in the gas. It may have been lying there, and got no fresh air mixed with it.
20484. Q There is simply an increase of temperature because of the air being stagnant? A I say that the air would give a higher temperature than the air outside.
20485. Q How much higher? A I cannot say, because I do not know the conditions before the fall. I imagine that if there were a fall over a large area, the air would come out of a narrow channel at great velocity.
20486. Q How much higher in temperature would the air be? A I cannot say.
20487. Dr. Eshelby. Q By the time that it came back from the face I should think it would be reduced to its normal temperature.
20488. Dr. Eshelby. Q The portion of the air which went upwards would reach the 4th Left and the 5th Right and the out-throw, would not that reduce the compression? A Yes. But if you fire anything from a propeller it will go straight. The moment the air started to go back towards the compression at the face commenced.
20489. Q Air is not a solid matter? A It will compress.



20695. Q It is split naturally at the opening out of the 4th Right, would it split right at each opening which it passed? A Yes. I do not say that it did not. When it reached the openings they were full of air, and the moment you apply pressure to the outside of a roof you apply pressure in every inch of that roof.

20696. Mr. Bryan Smith: Q If the roof were found burned on the outside of the 4th Right, would it not split in three?

20697. Mr. Wade: The witness has given himself away. He has traded us as an incandescent light. He says that if you apply force at one place you apply it all over. But if you apply force in an electric field like air, it neutralizes the force of the pressure, in every direction simultaneously, and you do not find it in a regular point at all.

20698. Mr. Eshelman: Q Would the fact that holes were found at the tunnel mouth after your decision? A I do not see how they could be found there without there being signs of burning pressure.

20699. Q They were burnt? A What I say is they were not burnt with flame. There may have been heat enough to burn them. I have seen no sign of flame in the pit. The moment an explosion occurs with fire-damp you see plenty of flame.

20700. Q Did you say that the air would be sufficiently high in temperature to burn people outside? A The air going outside would leave people as well—at least it might burn them. I do not know of the air expanding, but the air going outside certainly would.

20701. Mr. Wade: Q Did you maintain the heat supporting the roof collapse of the 4th Right? A Yes.

20702. Q Was there any dust on there? A No, indeed dust that I saw.

20703. Q Was there a wide area at the 4th Right—a larger area than in the ordinary No. 1 road? A I could not say the width of the pit 3-4 ft.

20704. Q There is a junction there of three roads? A Yes.

20705. Q Now that is clear from where Walker was found—would you say 20 yards? A It is a good distance, he was found on the flat.

20706. Mr. Anderson: Q Here is the evidence, Mr. Wade, of holes, as to the burning. It is from 4th of the evidence—

John Powell was badly burnt, he was very close to them. Walter Shock had all the clothes burnt off him, all his belt was around him, and that was charred up with fire. His hair and everything else was burnt.

That is in answer to Mr. Lyngdahl.

20707. Mr. Wade: A Yes. He says that he was burnt, but all the clothes were off him. There were no clothes on him.

20708. Mr. Anderson: Bells could not say anything about the clothes being burnt, if the clothes were not there.

20709. Mr. Wade: That was a question I asked him. He says that Shock's hair was burnt—he only had one button—and that was charred up by fire.

20710. Mr. Anderson: Q The witness is according to my recollection, but apart from the question of Shock, there was ample evidence that other persons were burnt.

20711. Mr. Wade: I say that you can get three indications by heat as well as by flame.

20712. Mr. Anderson: If you really think that you can make the Commission believe that the explosion with some considerable amount of violence of a body of air out of the 4th Right can cause hot high enough to be generated to cause a system of burning a long distance off, and in various directions, I am afraid you are reckoning without your host. We cannot believe it.

20713. Mr. Wade: I am proving no theory. We say that it is possible to get sufficient heat at the initial point—that the propelling poles.

20714. Mr. Anderson: The Commission think it is possible.

20715. Mr. Wade: That is the experience, and I am also dealing with coal dust.

20716. Mr. Anderson: Can you show that in any report or any inquiry ever held concerning a colliery explosion a theory such as this was ever suggested?

20717. Mr. Wade: If you would me twenty years back to suggest the theory of explosion by coal dust, or to say that it had been suggested, I should have had to answer no, also.

20718. Mr. Anderson: That is not the question. The rationale of the question to my mind is plain. Some of the evidence which this witness has given seems to me to be so utterly ridiculous from a scientific—from a scientific, primary, scientific point of view, that we really cannot pay attention to it.

20719. Mr. Anderson: Bells: This witness's evidence differs from the others—Anderson.

20720. Mr. Anderson: I have found the page on the evidence, Mr. Wade, in which your cross-examination occurred with reference to Shock. It is on page 112.

20721. Mr. Wade: I say that Bells is answer to a question by myself, as to what was the appearance of the body of Shock, and—

—Shock, like a sugar. His legs were broken, and twisted apart, but I saw no skin broken. He was lying on the side—he was not covered up at all.

Q You only guess that the clothes were burnt off him. You did not see any burnt? A I did not see any burnt—no.

Q You did not find any burning of the shirt? A I would not say that I did.

Q Limestone—as you found in the case of Allison? A I would not agree there was a burning of the shirt. It was not broken, although his hair was burnt off.

20722. Mr. Anderson: You see, in his hair was burnt off.

20723. Mr. Wade: I say that hair, whether there will burn, but if the heat was so great as to burn the clothes off the body would have been charred. My contention was that the witness Bells could say that he saw his hair burnt—his clothes were burnt off his back. That would be the foundation for a strong body of flame. I put the question to him, of with other reflections he found that the skin was broken, and he could not say that it was broken.

20724. Mr. Anderson: Everything was burnt off unquestionably.

20725. Mr. Wade: I might say that after Mr. Anderson's observation just now, I shall probably be able to shatter the evidence. I want to ask the witness on the last new question about waiting.

20726. Q Is there a difficulty about waiting the lampcase each? A We were all on mine roads.



Witness—Dr. Robertson, 15 February, 1961.

20728. Q. Have you come across any difficulties? A. Of course, there are some parts where we cannot walk safely.

20729. Q. Because of what? A. It depends on the shale roof which breaks off if you apply weight to it, but that is only the case where the shale is exposed.

Continued by Mr. Lysaght —

20730. Q. Are you aware that a number of men were burnt near Prince's Hall? A. No.

20731. Q. Are you aware that some of the men blew off the foot? A. Yes.

20732. Q. If any men were burnt in Prince's Hall can you account for them being burnt? A. No, I do not think I can.

20733. Q. On any men at the second month? A. No, unless it was by the hot air.

20734. Q. There would be no compression of air along the travelling road? A. No.

20735. Q. When did you first decide on this theory? A. I have not decided on any theory. I am giving you what I saw in the pit. I am giving you pure facts.

20736. Q. Have you had any conversation with Mr. Holden? A. No.

20737. A. Well, I will make an admission. This question had been discussed among the mine managers. I will make you a promise of that.

20738. A. Lysaght. The witness says so.

20739. Mr. Lysaght. Mr. Lysaght is entitled to ask the questions.

20740. Mr. Lysaght. Q. Did you discuss the question of the entrance of hot without flame with Mr. Holden? A. No.

20741. Q. Did you discuss it with Dr. Robertson? A. Yes.

20742. Q. With any other mining manager? A. No. I have discussed it with Mr. Holden.

20743. Q. And with Dr. Robertson? A. That is all.

20744. Q. You told Dr. Robertson that it was not a fair thing to go and are if there were gas at the top heading? A. Yes.

20745. Q. You said that Dr. Robertson told you to try and go to the face and get rid of gas? A. That was on the Saturday. He said, "Go to the face of that place and test it."

20746. Q. Do you know who he tested the face of the heading tested? A. It is a likely place in that gas, because it is high.

20747. Q. Did you know that the mine had gone off gas before? A. No.

20748. Q. You never knew that a man was burned there years ago? A. No.

20749. Q. Do you know that gas had been reported by miners? A. No.

20750. Q. Have you got the note-book you took your notes in? A. Yes.

20751. Q. Look how many leaves are taken up with notes. I want to see the value of your notes? A. There are nine leaves and a half of the book taken up with notes.

20752. Q. You did not take any notes until the Monday? A. There were no notes taken until the Monday.

20753. Q. All of these were taken on the Monday? A. I was there on the Friday and other days.

20754. Q. Did you take notes on the subsequent days? A. Yes.

20755. Q. You were there on the Monday, Tuesday, Wednesday, Thursday, and Friday, and all the notes you took, during those five days, are composed in nine pages and a half of a small note book? A. Yes.

20756. Mr. Robertson. That question is hardly fair, because it does not require a large note to put a man's memory about a matter.

20757. Mr. Lysaght. Q. What do you mean by saying that you did not think it was fair to go and look for gas? A. Because the air was not off.

20758. Q. How did you know? A. Because we were in the mine. It was used in the mine on the 5th Right side to a stopping which was blown out.

20759. Q. Where was that stopping—was it a stopping on the 5th Right side road that was blown? A. That whole of them were down.

20760. Q. What stopping was it that you saw down which caused you to say that it was not fair to go and look for gas? A. All of them were down.

20761. Q. Was it a door or a stopping? A. I did not see a door, it was a stopping between the back and the front heading.

20762. Q. Which way was it blown? A. The stoppings were blown into the front heading.

20763. Q. It must have been a stopping ridge of the 5th Right? A. All the stoppings were destroyed.

20764. Q. Did you observe a stopping ridge of the 5th Right? A. I say they were all destroyed.

20765. Q. Which way were they blown? A. There were two with the top blown off.

20766. Q. Do you know which way they were blown? A. A big stone was lying on the front heading, and part of the stopping was blown out.

20767. Q. Keep it mind the back end through ridge of the 5th Right. Was the stopping blown towards the main level or towards the heading road? A. The stone was in the main road and the back end of the back heading.

20768. Q. And the next one? A. They went all the same way.

20769. Q. Have you any note of it? A. No, it was on the Saturday night. It was on the Monday that we tried to find the way of the question. We were all asked to try to find the face of No. 1 Right and see whether there was anything there.

20770. Q. I want to know why it was unfair to ask you to do that? A. My reason for saying it was unfair was because we were asked to go in a place where there was not air.

20771. Q. It was unfair to whom? A. It was unfair to anyone who tried to find gas under these conditions—under conditions which do not exist at other times. Everything was destroyed, and the fact of so finding gas there would not be a guarantee that gas had been there at any other time.

20772. Q. Why did there had been gas there at any other time? A. No one.

20773. Q. To whom was it unfair? A. It was a test that was unfair to anyone, because it would be made under unfair conditions. That is what I want to get at. It is no use making a test when you cannot rely on it.



20170 Q Do you say so that under your theory if any gas was there before the disaster it would be taken up by the heat or dissipated before this time? A The gas was forced above the disaster how did it get there? A I cannot account for it. It may have been left by the heat. I cannot tell you how it got there.

20171 Q I suppose it would be an advantage to say that it came there from the hole of the coal? A I cannot give you any explanation. The gas was so slight that if it had been there you could not have found it.

20172 Q Did not Mr. Robinson find gas with the safety lamp? A I never heard of it.

20173 Q Can you give me any other reason why it was scarce? A That is the only reason—because it would be making a lot under false conditions.

20174 Q It would not have been a reliable test if no gas were found there? A I cannot say.

20175 Q You would have used the test then? A As my meeting I have gone to try what I have found, and so on any case those that I have made in either reading of the gas.

20176 Q You said that you did not think of making a comparison between Kunkin and Dudley at the time you made the inspection of the mine? A No, I did not.

20177 Q That was the first occasion you thought of it? A On the first day that I came out of the mine, on a Sunday, I passed the accident.

20178 Q At that time you thought that it was an explosion of gas and coal-dust? A I did not think anything. I knew that there was a great absence of flame and coal-dust—that was the reason I passed.

20179 Q You knew that the Dudley explosion was one of gas and coal-dust—you remember that you were not able to observe conditions of gas and coal-dust? A The remark passed by me was that the conditions of Kunkin and Dudley were not to be compared.

20180 Q What put gas and coal-dust into your mind at all? A You never heard me mention gas and coal-dust.

20181 Q What put the Dudley explosion into your mind? A I never gave it a thought.

20182 Q I want to know what put the Dudley explosion of gas and coal-dust into your mind as having anything to do with Kunkin? A I drew a comparison between the two.

20183 Q Did you think there had been an explosion of gas and coal-dust at Kunkin? A No.

20184 Q Mr. Robinson? Q Do you remember there has been an explosion at all? A I cannot find any trace of complete combustion throughout the colliery. I can only speak from the facts I saw in the mine.

20185 Q What do you call the whole phenomenon—the whole-scale destruction of property—how do you think it was caused? A I would say it was a pure wind blast.

20186 Q So I understand you that it was a pure wind blast? A That was the cause of it at the killed point.

20187 Q Mr. Eganley? Q There was some incomplete combustion of what? A Of coal-dust.

20188 Q You say incomplete combustion of coal dust—[Interposed.]

20189 Q The flame? Is it worth while mentioning this instance?

20190 Q Mr. Eganley? I was going to ask him how he accounted for Dr. Stah and Dr. Patten stating that dirty or slaty gas had come from carbonaceous poisoning.

20191 Q Witness? I did not know that.

20192 Q Mr. Eganley? Q Did you inquire? A No.

20193 Q Mr. Robinson? Q Did you see any of the bodies? A Three or four—I saw Rose and Bedford.

20194 Q What did they do? A We simply found the bodies that night—and marked the place.

20195 Q Were the Smiths? A The Smiths was all right, but they were black with dust coming from there.

20196 Q Did you mean to say that according to the medical evidence a large number of bones were found from after-damp? A I read it in the paper.

20197 Q What produced it—gas would have it without an explosion? A If it is pure after-damp there must be complete combustion. I understood that it was subacute scurvy. You can get dirt from incomplete combustion.

20198 Q Mr. Robinson? Q There must have been an explosion to produce it or else heat? A There must be heat.

20199 Q Did you ever hear of after-damp without an explosion? A Not so far as I know of.

20200 Q If you were not that the men died from after-damp you would draw your own conclusion? A I understood that the men died from carbonic oxide.

20201 Q Mr. Eganley? Q Did you read the medical evidence? A I only read what I saw in the Newcastle paper—everything was very short.

20202 Q Did you see about the burning? A I saw about the burning.

20203 Q I thought you said you knew nothing about burning? A You said at the funeral service.

20204 Q Did you try to find out what was the cause of the explosion without finding out the facts? A The facts are for anyone to see in the pit—the starting point—and the damage done.

20205 Q Mr. Robinson? Q Would not the condition of the bodies be a factor in reaching your conclusion? A Yes.

20206 Q Mr. Eganley? Q What made you assume that there had been a big fall in the 4th Right? A I was told it.

20207 Q Who told you that there had been any fall in the 4th Right? A On the Monday afternoon Mr. Robinson and I were with a party.

20208 Q Who told you there had been a fall? A Thomas Cook I think he was the first to say anything of it, when the two parties met he said, "Have you found anything?"

20209 Q Is it on the word of Thomas Cook that you accepted the statement that there had been a fall? A No, you wanted to know who told me. I did then not want to make an examination of it myself, and the remainder of the party walked away. We walked in so far as we could go.

20210 Q Did you leave that week before the disaster 25 feet of that coal had fallen? A No.

20211 Q You assumed that it was all one fall? A Yes.

[The Courtroom, at 4.40 p.m., adjourned until 10 o'clock the following morning.]

TUESDAY,



THURSDAY, 15 FEBRUARY, 1905, 10 a.m.

[The Commission met at the Supreme Court, King street, Sydney.]

Board—

C. H. H. MURRAY, Esq., D.C.J. (PRESIDENT).

D. A. W. ROBERTSON, Esq., Commissioner. D. FITZGER, Esq., Commissioner.

Mr. Bruce Smith, Barrister at Law, instructed by Mr. Wood, Crown Solicitor's Office, appeared on behalf of the Crown.

Mr. A. A. Ashmore, Chief Inspector of Coal-mines, advised Mr. Bruce Smith.

Mr. A. A. Lyne, Solicitor, appeared on behalf of—

- (a) the representatives of deceased miners, whosoever, by (victims of the explosion);
- (b) the employees of the Mount Kembla Colliery Company, whosoever, do;
- (c) the Illawarra Colliery Employers' Association (the Southern Mines Union).

Mr. C. G. Wade, Barrister at Law, instructed by Messrs. Dwyer and Barry, Solicitors, appeared on behalf of the Mount Kembla Coal and Coke Company (Proprietors of the Mount Kembla Mine).

(Mr. F. Garlick, Secretary to the Commission, was present) to take shorthand notes of the evidence and proceedings.)

20813. Mr. Bruce Smith: I might mention that we have received this morning a letter from Mr. Bower, enclosing Mr. Ashmore's letter to him of the 25th of May, 1903, and the Chief Inspector's report, dated the 27th of September, 1903, which was referred to. The original letter which was received by Mr. Ashmore is not attached, and, of course, Mr. Ashmore may protest that, if he writes to do so. Perhaps it is unnecessary to go further into the matter than to say that Mr. Ashmore's letter, written to Mr. Bower, is such an absolutely fair and proper communication that Mr. Bower's argument that he got something like a wash across to fall to the ground completely. Mr. Ashmore's letter is a very fair one, and a very carefully written one so far as to, by any possibility, give any offence to Mr. Bower.

20814. Mr. Bruce Smith: Is Mr. Bower complaining of it now?

20815. Mr. Fitzger: No. He was asked for a copy of it, and he has simply sent it down.

20816. Mr. Bower: He gave one report to the colliery on the official book, and another to the miners, I take it, and they are different.

20817. Mr. Fitzger: His really dove attention to certain matters in a letter to Mr. Ashmore; and those matters were not put in his report.

20818. Mr. Bower: I think the fault lies with Mr. Bower.

20819. Mr. Ashmore: Mr. Ashmore might protest that I said.

20820. Mr. Ashmore: I have the whole of the papers, if the Commission desire to see them.

20821. Mr. Bower: I will hand down three letters for (Counsel) to use if they wish. Mr. Bower explained it by saying that—

20822. Mr. Ashmore: It was some fear on the part of his employers.

20823. (The papers referred to were then handed down for Counsel to use. They were a letter from the Chief Inspector of Coal-mines, dated 25th of May, 1903, to Mr. W. Bower, which was put in and marked Exhibit No. 43, and a report, dated 27th of September, 1903, of an inspection of Seaburn Colliery made by Chief Inspectors Bower and Bunscombe, which was put in and marked Exhibit No. 64.)

Mr. C. H. H. MURRAY was sworn, and answered, as follows—

Examination in Chief by Mr. Wade—

20824. Q. What is your name? A. Silvester Henry Warburton.

20825. Q. What are you? A. A mining surveyor.

20826. Q. Where? A. Mount Kembla Colliery.

20827. Q. How long have you been employed in that capacity? A. About five and a half years.

20828. Mr. Ashmore: Q. At mining surveyor? A. Well, as assistant before. For about two years, I suppose, as mining assistant.

20829. Mr. Bower: Q. Assistant before to whom? A. To Mr. White and Mr. Antyphos.

20830. Mr. Wade: You made a plan of the different ages of bore in Mount Kembla? A. I did.

20831. Q. Where did you make that? A. Immediately after the disaster, before anything was disturbed.

20832. Q. That is a bit vague. What month would it be for you remember? A. I cannot say.

20833. Q. Do you remember the Government Mining Surveyors being there? A. Yes.

20834. Q. Was it about that time? A. Just the same time.

20835. Q. Was anybody with you? A. Yes.

20836. Q. Who? A. Mr. Ray and Mr. Morrison.

20837. Q. Mention the deputy? A. Yes.

20838. Q. Look at Exhibit 37, 38, and 39—these are your plans? A. Yes.

20839. Q. I want you to take the one showing the 4th Right level of all. How did you come to draw the 4th Right level angle? A. I had directions from Mr. Robinson to make the 4th Right, the centre to start from.

20840. Mr. Ashmore: Q. I did not quite hear that? A. I had directions from Mr. Robinson to start my surveying from the 4th Right, and then to work backwards and forwards.

20841. Mr. Wade: Q. Work backwords and forwards, where? A. From the 4th Right.

20842. Q. On what? A. On the main road. I went in to Messrs. Ray and Mr. Ray's place, up at the back looking of No. 1, then on the left hand as far as I could and so's place.

20843. Mr. Bower: That is not an answer to your question, Mr. Wade.

20844. Mr. Wade: I was coming to that, Your Honour.

20845. Q. Did you take any observations of bore in the 4th Right level as all? A. Yes.



20553. Q In respect to what? A In respect to the lane coming from the 4th Right. I took observations as to the form coming from the 4th Right post.

20554. Q I want to know now, if that is so, why you did not draw the 4th Right at the correct angle? A Because I could not get in my there at the time I made the survey, owing to the thick damp coming out of the 4th Right.

20555. Q How do you mean? A I could not get in here to show the proper angle at which the landing was done.

20556. Q You got signs of fence up here [pointing to a portion of the 4th Right between the main No. 1 and near the 3d wire post] how did you get that? A I got that afterwards.

20557. Mr. Johnston. Q Could not you get the angle afterwards? A Yes, but the fact of the matter was that I had forgotten all about the angle. I sketched the cut through at right angles; and I showed the 4th Right at right angles; and then, when I came to make my measurements for the drain, which I had not shown on the plan of the main lane as this, I found this was not, and I do not alter it, thinking that perhaps it would not be a great matter.

20558. Mr. Wade. Q And this No. 38 shows your notion of fence towards the face of No. 1 Right? A Yes.

20559. Q You are the face of eye throughs branching off to the left from No. 1 front heading. What is the distance there at that point marked in red ink? A 47 1/2 feet.

20560. Mr. Wade. Q 47 1/2 feet from where? A 45 1/2 feet from the 4th Right to the place in the left.

20561. Q From the junction of the 4th Right with the main road? A Yes.

20562. Mr. Wade. Q Tell us the signs of fence you saw travelling that line of cut through, going to the left or west.

20563. Mr. Andrew Smith. Do you mean the face of cut through near the lane?

20564. Mr. Wade. Yes, the line of cut through travelling to Parrell's and Adams's.

20565. Mr. Andrew Smith. The corner to the West.

20566. Witness. Yes.

20567. Mr. Wade. Q What was the first thing you saw? A The first thing I saw was the piece of fence lying at the red line.

20568. Q Do not say "fence." Describe the place. Just show us the first sign of fence you saw leaving the front heading, and say what it was—describe it. A The corner on the left-hand side leading into the cut through to the left of the main tunnel at a distance of 3,455 feet from the 4th Right position.

20569. Q How was that corner? A It was lying at right angles to the side, against the side.

20570. Q In what way against the corner—lying at right or back? A Well, of course, corner, as a rule, is a squarely against anything, but it seemed to have been driven with considerable force up against the side of the cut.

20571. Q On that place, across the front heading near that point there is a corner marked with a dotted line? A Yes.

20572. Q Were there marks there at the time you made the survey? A No, present in the distance.

20573. Q What was that—corner, or what? A Corner.

20574. Q Can you say at all what became of it? Did you see any remains of that corner when you were making that survey? A I concluded that the piece on the corner of the side was the remains of that corner.

20575. Q What is the next thing you saw going to the west? A Another piece of fence there [pointing to the plan].

20576. Q Where you got to that point? A Signs of fence on Parrell's land, No. 105.

20577. Q What did you notice there? A The corner on the left-hand, or western side, of this land was there in such towards the left-hand side, the west side.

20578. Q Did you see how it has been fenced? A Yes, the fences were standing. One or two were down. The props that supported the corner were well standing.

20579. Q On which side of the prop had the corner been raised? A On the right-hand side going in.

20580. Q Which do you call the right-hand side? A This side [pointing to the plan].

20581. Q I think there is some mistake. You are the way you have drawn that? A Yes.

20582. Q I ask you which side had the corner been angled before it was moved? A On the left-hand side.

20583. Q And where had it been moved to? A Still further to the left-hand side, away from the previous position, to the left.

20584. Q The west? A Yes.

20585. Q Was there anything else you saw in the land itself? A I saw no signs of any fence.

20586. Q Take the cut through at the mouth of that land,—how had the air been taken up there when it was working? A On the west side.

20587. Q How was that done? A By breathing.

20588. Q Where? A By a corner across the roadway, and then up to the face.

20589. Q Did you see any signs of that corner, that had been across the roadway? A Yes.

20590. Q Where was that? A It was down in this direction, west.

20591. Q Did you see any corner before that? A Yes, this corner 155 feet from the junction of that cut through with the main level.

20592. Q You have got something shown there as wrapped around the prop—that is the corner you refer to? A Yes, where would the prop.

20593. Q What is the next thing you saw going in? A I saw a cap at 144 feet from that corner mark at the junction of the main level and that cut through, which I took to belong to Thomas' line.

20594. Q Was that cap straight? A No, but the top was only 12 feet to the body in the vicinity—not very pronounced, but the right of the corner. I found the body along here [pointing to the plan].

20595. Q Where is "here"? A I have got shown the body because, of course, it was not there when I was making the survey. It was still further to the westward of that point of corner which I have mentioned as being wrapped round a prop.

20596. Q The body would be between the turning into his own working place and the turning into Parrell's working place? A No, his body was immediately opposite his own working place, in the middle of the road, and his face was downwards.

20597. Q The cap was lying on the ground? A Yes.

20598. Q Was the lamp in it, did you notice? A I did not see the lamp.



H. Hunt—U. S. Warrenton, 26 February, 1932.

20094. Q Now, I took the other signs of three? A I proceeded up Thomas Tuff's and Dean's place, and I noticed that the corner had been drilled all the way to the northwest.
20095. Q How had that corner been found? A Just the same way as in the other hole.
20096. Q On the west side of the prop? A Yes, on the west side of the prop.
20097. Q Was there a corner across the road into Tuff's place? A No, there was none standing there at the time.
20098. Q But there had been? A Yes, in the ordinary course of working there was.
20099. Q Was that there? A No, it was not there.
20100. Q Did you see any sign of that? A What I took to be it was wrapped round a prop in the middle of the road at 224 feet distance from that previous starting point on the main level.
20101. Q That would be in the southeast? A To the southeast of where it was, previously.
20102. Q Did you see anything else there? A I saw what I took to be Thomas Tuff's shirt or some article, in that hole, wrapped round a prop, showing no signs of any burning.
20103. Q What is the next sign, going west still? A Then, I went towards Adkin and south pillar—at a distance of 336 feet from the previous starting point on the main level.
20104. Q What did you see there? A I was on the pillar just a little indentation in the end, where I understood they had been working at the time of the accident, just commencing to take a stick as it were, a 140, as it were, out of the pillar.
20105. W. Robertson. Q By the way, what was the object of standing to take out the pillar before it was found? (Witness did not answer.)
20106. Q The pillar, I think, was not quite found, there was not another cut-through above that? A That was worked out, all waste (pointing to the plan).
20107. Q From to Adkin's pillar? (Witness did so.)
20108. Q Was there a cut-through above that? A No, it was waste workings.
20109. Q Was there a cut-through above that line of cut through? A No, there was not a line of cut-through.
20110. Q Then that would be actually taking out the pillar before it was found? A There was a hole here that I have not shown.
20111. Q But it is not a pillar until it has four sides, is it?
20112. W. James Smith. Q Mr. Robertson wants to know, was not this continuous coal down here upwards (pointing to the plan)? A No.
20113. W. Robertson. Q Was that a complete pillar? A No, but I believe it was far less in size than I have shown it.
20114. Q It is a very simple question. You know a pillar must have four sides to it. Was it a complete pillar? A Yes, it was a complete pillar.
20115. Q If there was not another cut-through higher up, how could it be a complete pillar? A There was a 300, I understood, Mr. Robertson, taken across from the top side, and a kind of stick left here, and that was to be taken out later.
20116. Q Is that shown on the plan? (The plan was shown to Mr. Robertson.) In point of fact it was not a pillar at all? A They were taking a lift up from the edge of the waste. That would be the boundary, show, the left-hand side (to the west side).
20117. Q As far as I can see, the pillar was not a pillar at all. However, I do not know that it is very material.
20118. W. Wade. Q Which way were they working? A From north to south.
20119. W. Wade. Q Is that all right and to the north of the side of these levels, as far as they have gone? A Yes, all right and.
20120. W. Robertson. Q Then that could not be a pillar.
20121. W. Wade. Q I might point out to the Commission that the thing would be much worse plan if we had the railway plan. That is a plan made out by the Government officials, partly from the railway plan, and partly from information. That goes on the lithograph a different form what appears on the actual railway plan.
20122. W. Wade. Q I am not prepared to say the actual railway plan, which was shown to the Commission.
20123. W. Wade. Q This does not appear to show any difference from the lithograph.
20124. W. Wade. Q [He then explained the plan to the Commission.]
20125. W. Wade. Q I may say here that it is a pity to think that I have shown the dotted line on the east side of the pillar.
20126. W. Wade. Q That is not out to the east? A Yes.
20127. W. Wade. Q I want the signs of three. You brought us far to Adkin's place? A I saw partially. Black chips blown over on to dirt sides.
20128. Q Where were they when you saw them? A They were to the west end, about 25 feet from the corner of Adkin's and south working place.
20129. Q How were they—on the rails, or off the rails, or what? A Off the rails, jumbled up all together, and I know about.
20130. Q Did you notice anything else about the chips, about the bottom of the chips? A There was coal lying about.
20131. Q Whereabout? A Hard up against the end of the chips.
20132. Q Which end? A The seaward end.
20133. Q Anything else? A I noticed a coat wrapped round a prop. It did not appear to have been touched by any hand.
20134. Q Where was the coat round a prop?
20135. W. Wade. Q Might I suggest that, if all these things that Mr. Warrenton speaks of are shown on the plan, he might give his evidence as Mr. Coalidge did, and say "I made that plan from observation which I personally made on the mine; that plan is correct, and it will not take up much time.
20136. W. Wade. Q I have nearly finished.
20137. Q About this coat—how was it on the prop, was it horizontal or not, to the coal? A No, it appeared to be just wrapped round the prop.
20138. Q Where was it, on the ground, or what? A Almost on the ground.
20139. Q Was the prop standing? A Yes, the prop was standing.



20564. Q Tell me exactly where the cart was with regard to the prop? A It was wrapped immediately around the prop.
20565. Q Would it be on the ground? A I would not like to say it was right on the ground, but it would be about mid-way.
20566. A. *Mr. Warburton* Q Was it standing up in that position, wrapped around the prop? A It wrapped around the prop.
20567. A. *Mr. Wade* Q What was the prop? A It was a prop that had been used for directing the traffic in the city through.
20568. Q A split prop, or what? A A round prop.
20569. Q Was there anything else you noticed? A I also saw a light device laid into a prop, in fact that you could not possibly put it out without breaking it, mounted in front of the standing heading in an *Academy* and *James* pillar. This device was on the ceiling side of the prop.
20570. Q Was it open or shut? A The blade was closed in, it was open.
20571. Q Was the blade standing open or partly shut, or what? A Standing open, with the handle dropped. It was down like that [indicating, with a pull pin, that the blade was about in a straight line with the handle, the angle between blade and handle being a very obtuse one].
20572. Q Did you say the handle was dropped? A No the blade was like in that direction, straight. It would be down into the prop that way [indicating as before].
20573. Q Was that all? A Yes, that was all. Of course I went into *Academy* and *James* place, and I saw a full stop standing there unobscured.
20574. Q How was the location? A I did not notice the location.
20575. Q Was it a hard or a pillar? A A pillar. They were taking a lift off it.
20576. Q Now come down here in the line of cut through and outside from there you have been speaking of—that is just edge of the 5th Right.
20577. Q You have got a marking over "Corner club slightly disturbed"? A Yes.
20578. Q That is in the second cut-through? A Yes.
20579. Q Is what way was it disturbed? A Just panned down about a bit.
20580. Q And what does this thing like a prop mean? A The props were standing.
20581. Q Has what does this indicate? A That it is good, it is cut in.
20582. A. *Mr. Wade* Q Is it not yours? A I do not know whether it is really mine.
20583. A. *Mr. Wade* Q It is mine.
20584. A. *Mr. Bruce Smith* I suppose nobody else has made any marks upon that but yourself and Mr. Wade? A No.
20585. Q Do you all your own? A Yes.
20586. A. *Mr. Wade* Q You have the revolution place here, have you not, Mr. Warburton? A Yes.
20587. A. *Mr. Bruce Smith* Before he goes to the red-dotted place, do you mind asking him how he came to write that other angle, as the 2nd Left, as a right angle instead of an obtuse angle?
20588. A. *Mr. Wade* Q Just explain that? A For the same reason I had decided to start from the main road, and I did not think it was of any consequence, and I showed them at right angles.
20589. A. *Mr. Bruce Smith* I You had your eye plan in front you when you drew that? A Yes.
20590. Q And that does not show a right angle? A No.
20591. Q You did not even follow that? A No, my direction were to make the 5th Right the standing place.
20592. A. *Mr. Wade* Q On the plan [plan showing the constitution of the cables] what does the line represent? A The main cables.
20593. Q And the peak, or someone? A The main cables.
20594. Q There is a piece here from the 3rd Right road which you have not marked at all; that is, between the telephone room and the 1st main road, and the corner heading? A That is purely a mark of our ventilating that system. That line has been shown the main cables, and the corner the main cables. Of course there are marks of our ventilating other systems.
20595. A. *Mr. Warburton* Q But is not there a connection between some of these? Is not that 2nd Right, rope road actually an *Academy* street? A It is a kind of balance.
20596. Q It would go either way? A If anything it had a tendency to go this way [indicating an easterly direction].
20597. Q An easterly one? A Yes, an easterly one.
20598. Q There are no dots? A No.
20599. Q And, therefore, it is false air? A Yes.
20600. Q Does that apply to both these headings—about are two partial headings there, you know, are they left corner? A No. The first heading I call the rope road. On the back heading, I understand, there was a door.
20601. Q But you only indicated that? A Well, I have seen it, but a couple of weeks, or perhaps, less than that, before the disaster, I do not remember seeing it, so I cannot swear by the point.
20602. Q Further in the south there are two headings coming up from the daylight street, are not they indicated? A Yes.
20603. Q Well, they ought to have been shown in blue? A Well, I have simply shown the main cables and cables. There are other marks on the plan as well, which the Government Draughtsmen put on, showing the ventilations, showing the way in room. I simply put the main cables on.
20604. Q To a certain extent, the plan is incomplete? A No, there are no more shown as I happen denoting the way the ventilation travels.
20605. Q Yes, but you show on the plan that the incident are in blue, and I know myself several roads that should have been indicated like that cut out. I do not know how many more there may be in addition to what I know from my own observation? A Would not you call those right angle of air, whether main cables or not?
20606. Q Whether main cables or not, they are cables? A You see this was simply made after the Government Draughtsmen had put the system on showing the ventilations.
20607. Q But we called the Company to supply us with a plan showing the constitution of the air at the time of the explosion, and a plan has been supplied which is incomplete, to say the least of it? A There are arrows showing the direction of the ventilations as well.



Witness—J. E. Warburton, 26 February, 1933.

20595 Q Then, another point, you have marks there indicating, I think, stairs down and also wooden doors. What do you indicate means doors by? A I have no marks here of my own, with the exception of two—that is, initials shown in May and stairs down.

20596 Q That is not my question—how do you indicate stairs down? A With a C.

20597 Q And wooden doors? A With a D.

20598 Q And wooden doors are not on the table of references? A I did not make that table of references. That was simply sent to me; I could not make an alteration.

20599 Q The Company was asked to supply a plan to the Commission, and, evidently, they supplied a plan made up by somebody else? A That is a diagram was sent to us.

20600 A Mr. Anderson: Open up, and you might as have got the information on

20601 Q Mr. Egan? Q You put on that plan the different C's and D's that should be on the different models?

A Yes, that is correct.

20602 Q But in the reference table there was no reference for wooden doors? A No.

20603 A Mr. Anderson: Can you say that the plan is accurate? A To the best of my knowledge it is. It was made under the direction of the Manager and the foreman for the district. I simply put down what was told me under the direction of the Manager and the foreman for the district at the time of the discussion.

20604 Q Mr. Egan: Q But does not your survey plan show the system of ventilation? A No.

20605 A Mr. Anderson: That would not necessarily be the case. If a plan of the ventilation is required, it is usual to have a separate small scale plan to show it by itself, because the survey plan is changing from day to day.

20606 Q Mr. Egan: Q Surely the contours and the doors are part of the system of ventilation which the Court has asked the Company to prepare for its information?

20607 A Mr. Egan: The contours and the doors shown on the diagram, but he cannot be responsible for them, and he is not prepared to say they are correct.

20608 A Witness: I am prepared to say they are correct.

20609 Q Mr. Egan: Q Have you checked over the doors and contours as shown on the diagram? A Yes, I have checked them. There is one mistake. I found a door opening the wrong way.

20610 Q That is the wooden door in the back leading you out of the 3d Right? A Yes, you see I have checked that, and shown it the way I saw it in the plan.

20611 Q But the lamp of the D show the way the door opened? A Yes. It opened towards the tunnel mouth.

20612 Q You were in the mine on the night after the disaster? A Yes.

20613 Q Where were you first in these places, such as Fawcett's and Toot's and Anderson's? A That would be in my second walk.

20614 Q How long after was that? A It would be about 1 o'clock in the morning of the Friday.

20615 Q Were the conditions the same then as they were when you made the plan? A Yes, practically the same.

20616 Q Were the bodies there when you first went in, or had they been moved? A The bodies were all there, with the exception of William Nelson's body.

20617 Q Treen to my question. I was talking of those places which you have been describing, to the west of No. 1 from looking? A Yes, I was in the bodies were there.

20618 Q The bodies were there in those places when you first went in there? A Yes.

20619 Q Do you know, of your own knowledge, anything about any clocks near the east edge of the 4th Right? A When I went in I saw a clock in mine house laid over against the left hand rail.

20620 Q Do you think, if that would be two or three days after, when we could get in, I saw the remains of other I think in the clock shown laid up against the rail, as it was, of the hand.

20621 Q On which side—was the disaster? A Yes, it would be on the left hand side looking in the road.

20622 Q Would it be on the edge side or the outside side of the 4th Right road?

20623 A Mr. Anderson: Are not you referring to the water in the 4th Right, the edge of the rail in the 4th Right?

20624 Q Mr. Egan: Q I want to get at them clocks. I want to know if he knew anything about them before the disaster?

20625 Q Take the No. 1 main rope road, from the 3rd Right junction up to the 4th Right junction, what was the condition of that road as to surface or dryness at the time of the disaster? A I should think it was damp, or equal, to the 4th Right up to the 4th Left. It was damp; in fact, we always had a great amount of trouble to keep the rope from being damaged by the water.

20626 Q Where was the coal fire, was it three or smaller there? A There was a slight smolder about the middle of the road, and was between the 4th Right and the 4th Left.

20627 Q Do you know the 3rd Right? A Yes.

20628 Q Was there any moisture or water about there? A My memory does not say about that.

20629 Q Do you remember if there was a pump in a pump near the 3rd Right? A In the 3rd Right there used to be a pump. We had a good deal of water in here [pointing to the plan] and we used to draw it from there into a water tank.

20630 Q How did it run from the 3rd Right? A By gravity.

20631 Q Then, through what part of the mine? A As up the pit, I saw a big road, and then it runs out through into a drain cut across the main level, then again through a drain to the water level, and down a steep shaft to the surface.

20632 Q How far would it go along the travelling road from the 3rd Right—how many yards, roughly? A Yes, roughly, about 200 or 300 yards.

20633 Q Before it turned off? A Before it turned off to go into the drain.

20634 Q Do you remember if there was any moisture in the 4th Right road after the disaster? A No, I do not remember seeing any.

20635 [A sketcher's plan of Mount Adelaide Mine, showing the ventilation of the mine at the time of the disaster, prepared by J. E. Warburton, Surgeon, Mount Adelaide Mine, was put in and marked "Exhibit No. 45".]

GREEN EXAMINATION



Cross examination by Mr. Egan —

20597. Q The whole of your experience has been obtained at Kumbia? A No.

20598. Q Where else? A Newmarket.

20599. Q What experience had you at Newmarket? A I had had experience also at Kumbia. I was under Mr. McGrouther and Mr. Jones at Kumbia, and I was under Mr. D. McGrouther, Mining Engineer, at West Wyalusing.

20600. Q Mr. Egan? Q Do you tell Mr. McGrouther, of Kumbia, a mining engineer? A I think so; he holds a mine manager's certificate.

20601. Q Mr. Egan? Q What is the total number of years' experience you have had? A I am not sure of the exact date at present, but I should think from five to six years.

20602. Q Now, in preparing the plan showing the ventilation of the mine, you simply put blue where the arrows showed intake, and certain where they showed return, is that that all? A I went over the colliery plan again with the Manager and the known for each district where I was ventilating, and checked the ventilation, not where they were mine intake I coloured them blue, and where they were main return I coloured them red, and after all of me going through, none of any, I left with the arrows shown by the Government draughtsman, and added where were necessary.

20603. Q You simply took the lithograph, and put on the blue to show intake simply where the arrows showed intake, before you worked it with the Manager? A No.

20604. Q Do I understand that you verified it before you put down the blue and the red marks? A Yes.

20605. Q On what day did you verify it? A I cannot remember the exact date.

20606. Q Where did you verify it? A In the colliery office, in the presence of the Manager.

20607. Q At Kumbia? A At Kumbia.

20608. Q How long ago? A Just a short time ago. I cannot give you the exact date—a few days ago.

20609. Q A few days ago? A Well, immediately we got the information from Sydney we attended to it. I do not remember the date.

20610. Q Cannot you remember when it was that you verified this plan with the Manager and the deputy?

20611. Mr. Wade: Do not mean for this purpose, so bring it back.

20612. Mr. Egan? Yes, it was not prepared until it was brought here.

20613. Mr. Wade: The plan of the ventilation of the mine was prepared long ago.

20614. Mr. Egan? Q Do I understand that the plan that I brought here was prepared long ago? A No.

20615. Q What was that plan of the ventilation, with the red and blue put on, prepared by you? A That was prepared when we got the request from the Court.

20616. Q About how long ago? A I told you. I cannot tell you the exact date. I told you a few days ago, immediately after we got word from the Court. I cannot go any further.

20617. Q How long did the ventilation of it take? A A good while.

20618. Q What is a good while? A Hours.

20619. Q How many hours—just roughly? A I cannot say that. I did not have a watch on it.

20620. Q Was it in the forenoon, or the afternoon? A It was in the evening, after work.

20621. Q One evening? A Yes, and part of our morning.

20622. Q You see here on the plan that no arrows are shown on that road down to the daylight landing (referring to the daylight landing running between the Tarns pass and the Tarns pass), nor on the travelling road (referring to the travelling road running parallel to the daylight landing) no arrows are shown? This is not a travelling road.

20623. Q What was it that I? It is called the air heading.

20624. Q It is from No. 1 down to the daylight adit—there are two roads? And the lithograph shows no arrows on either of those two roads, and it not showing arrows you did not show in which direction the air went? A As I have said before, there was a kind of balance here.

20625. Q I do not know what it was, you did not show in which direction the air went between there were no arrows there.

20626. Mr. Wade: Q Did you say that was the reason why you did not show it?

20627. Mr. Egan? Q Was not the reason you said it to put either blue or return on those two roads because there were no arrows to show in which direction the air was going? A That is not the reason.

20628. Q You say that is not the reason. A That was not the reason. The main reason was, as I have said before, the blue lines show the main intake.

20629. Q Now, can you tell me in which direction the air was travelling on the bottom of those two roads? A Yes, the air would have a tendency to go that way (up).

20630. Q From the daylight adit towards the No. 1 travelling road? A Yes, and then it would be picked up again by the air and carried on (meaning that it would be carried on with the main intake air in the No. 1 main level).

20631. Q Now, regarding the top of one of those two roads, why was the air going? A There was a narrow shaft at the bottom end of the road, and if it had a tendency at all, it would go through the narrow shaft. There was a narrow hole at the top of the daylight landing on both the roads going to the No. 1 main level.

20632. Q Now, would any of those two stoppings bring there present the air (referring to the air)? A (Interposing).

20633. Mr. Wade: He did not say stoppings.

20634. Mr. Egan? Q Did you say air stoppings? A I said main stoppings.

20635. Mr. Wade: Q Not two air stoppings? A Air stoppings, light air stoppings.

20636. Mr. Egan? Q Would not the effect of those two light air stoppings there be to prevent any air coming on to the No. 1 main level? A People think that where there are air stoppings there is always a certain amount of leakage. That is why down we go on.

20637. Q Also down? I said air stoppings? A Yes.

20638. Q Not merely leakage? A Not that you could get through.

20639. Mr. Wade: Q They were sealed? A They were sealed up and broken.

20640. Mr. Egan? Q Was not the object of those two stoppings to prevent any air going in to the No. 1 main level? A Yes, because we had a direct air leak to ventilation (pointing to the shaft in the east and the north of the Tarns pass).



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- 21073 Q That being so, do you say that the air would travel towards the No. 1 Main Road? A Yes, then would be a slight tendency, to go that way. There is a kind of balance here (the daylight heading) as well. There are all old workings—on new workings here.
- 21074 Q Do not you see that as soon as the air was prevented by those stoppings from getting on to the main level, then there would have been very little air to go up to the main on the 5th Right? A Yes, I have not heard there would have been very little air to go up to the main on the 5th Right, but before that, they (the stoppings) were there to hold the air into those waiting places.
- 21075 Q Do I understand now that all the air going on the daylight heading had to go right up to the 5th Right, and none of it to go to the No. 1 main level? A Had it to go there.
- 21076 Q That was the object of the scheme of ventilation? A Yes.
- 21077 Q Now, do you say that you know that quantities of air did scale through those various stoppings towards the main level? A I say it would have a tendency; but, on the other hand, it would mix with the intake air and do away with the main.
- 21078 Mr. Black Q I think air flows where? A If any scaled through from the No. 1 daylight, through the main, it would mix eventually with the intake air coming in No. 1, and ventilate those workings.
- 21079 Mr. Black Q Were the main and the No. 1 travelling road open? A No, I think there was a screen there.
- 21080 Mr. Spinks Q There is no screen shown on the plan.
- 21081 Mr. Spinks Q I do not think there was any screen.
- 21082 Mr. Spinks Q Looking at the 2nd Right rope road, was not that part of the main intake for the main up to the 5th Right? A There would be a slight coming up there, but it was a kind of balance.
- 21083 Q Does not the ventilation plan show the current of air passing along the 2nd Right rope road by the screen? A Yes, it is a scale. It scale air might go up there.
- 21084 Q The 2nd Right rope road was the balance road? A Yes, there was a certain amount of air coming up.
- 21085 Q Would not that require to be considered? A Yes, there was a certain amount of air coming up there, sufficient to keep it there.
- 21086 Q Why did not you show that there was an intake coming? A It is not a main intake. I have said before that these little lines simply represent the main intake, scales of air are shown by arrows.
- 21087 Q Then this plan does not represent the true ventilation of the mine? A Yes, it does.
- 21088 Mr. Spinks Q Do you mean that it came from out to west along the 2nd Right? A From west to east.
- 21089 Q What are you going by—by these arrows? A Yes.
- 21090 Q Are you aware these arrows are right? A I said it would have a tendency. I said it was a balance.
- 21091 Q I am not speaking of the heading to the daylight road, but of the 2nd Right. Would it go from east to west or west to east—think of transportation of those arrows? A It would go from west to east.
- 21092 Q I think you will find those arrows are wrong. Are you aware whether the air went from west to east or west to east along the 2nd Right? A If you look at page 34 of the request somewhere you will see Adam Smith's evidence on that, at the beginning of the second last paragraph.
- 21093 Mr. Spinks Q Do you know that Frank, who was in command about here at the time of the explosion, said that that air was travelling from east to west? A Yes, I will say again that there was a balance here.
- 21094 Mr. Spinks Q The merely where to the arrows.
- 21095 Mr. Spinks Q And Frank says the arrows are wrong on the plan.
- 21096 Mr. Spinks Q I do not see what Mr. Spinks says. I say what I have been saying before: there was a balance here, and, if anything at all, the air had a tendency to come this way, which it did. I have got a balance here, and, if anything at all, the air had a tendency to come this way, which it did. I have got a balance here.
- 21097 Mr. Spinks Q You say that your calculations by like there show your main system of ventilation? A Yes, the main intake.
- 21098 Q It is not a fact that the travelling of the air along the 2nd Right rope road is really a part of your main system of ventilation? A No, it is not a part of the main system.
- 21099 Q You know that the whole of the ventilation which goes along the No. 1 travelling road must go by the 2nd Right rope road. Do not you know that you have double doors there on the upper side of the 2nd Right? A That there is a double door there you will notice on the plan, before you come to those doors, and the screen is on the main side (west), and, consequently, there is a pull on the ventilation this way (west), a pull on the air.
- 21100 Q Is not that so, that the air must travel along the 2nd Right rope road? A No "must".
- 21101 Q What are the doors for? A To stop air going into the screen from the 5th Right.
- 21102 Q Where does the ventilation go then? A It is into the main level.
- 21103 Q I thought you said a screen, and that the screen was on that plan were correct? A I have already said that there was a balance there, and the air would have a tendency to go up the 2nd Right.
- 21104 Q But the screen must clearly to the fact that the ventilation does go there? A But you understand that those arrows simply denote a scale of air, not the main intake.
- 21105 Q But you have any screen here on the plan? A There is one on here at the top rail.
- 21106 Q As a matter of fact, do not the screens on the plan that you have prepared show that the main intake comes from the main heading into the back heading, into the travelling road, instead of going where you say now? A The back heading of the 2nd Right.
- 21107 Q Do not the arrows indicate that the ventilation is coming from the main heading into the back heading? A There is a scale towards both places, the principal air would go into the main level.
- 21108 Q Your arrows do not indicate that? A But the plan does.
- 21109 Q The arrows indicate that the principal portion was going on the 2nd Right? A The main line shows it.
- 21110 Q I thought you told the Commission that you took as your guide the arrows, and that you had verified those arrows as correct? A No.
- 21111 Q If we are to take the arrows, we must believe that the main ventilation from this part of the main heading must go to the 2nd Right? A It would have a tendency to go there.
- 21112 Q This door which you had in place—you have placed that on subsequently to the preparation of the diagram? A Yes.
- 21113 Q Was that door there prior to the explosion? A I understood so. I was not here for a Fifth with before the disaster.



21184. *Mr. Lyngby* [At various places on this plan you have shown double doors where—originally only single doors were shown.] A. Yes.
21185. Q. Look at three double doors at the 4th Left travelling and landing route—by whom actually did you put the double doors there? A. Mr. Morrison's.
21186. *Mr. Wade* [They are not double doors, they are screen doors.]
21187. *Mr. Lyngby* [Q. There are two screen doors instead of single doors, as before—By whose direction did you put the screen doors along the 4th Left travelling and landing route? A. From my own knowledge, and from Mr. Morrison's.]
21188. Q. Did Mr. Rogers give you any directions, as to where screen doors were to be shown that were not already shown on the plan? A. Mr. Rogers was there at the time—He was in the office at the time.
21189. Q. Can we make it that we are depending on Morrison for the position of these screen doors shown by you—those that were not already on the drawing? A. One we take it that you relied on Morrison for the position? A. And my own knowledge, too—I used that before.
21190. Q. What had you been up the 4th Left travelling road to see these screen doors? A. A week or two before.
21191. Q. And can you swear that there were double doors at the junction of the 4th Left travelling and rope roads with the main level? A. I cannot swear, but to the best of my belief there were.
21192. Q. If you were up a week before the disaster—[interrupted] A. A week or two, I said.
21193. Q. You ought to know if there were double doors at the junction of the 4th Left with the main level; do you know it? A. I cannot say exactly.
21194. Q. You do not remember? A. I do not remember.
21195. Q. And do you mean to say that you can remember the positions of doors further along the 4th Left from your own knowledge? A. Yes, from memory.
21196. Q. And can we take this clearly, that you put these double doors at the 4th Left on the direction of Morrison? A. Morrison and the Manager.
21197. Q. Can you remember that the Manager did tell you to put double doors there? A. No, they were built in the office together, and my mind was not that much impressed with the details.
21198. Q. Have you ever prepared at any time a plan showing the ventilation of Kimball Mine before this one? A. Yes.
21199. Q. When did you prepare the last? A. I think I prepared one for the inquest.
21200. Q. Was it prepared? A. I could not say—I was not retained on it.
21201. Q. Did you take it to the Queen of Wellington, to the inquest? A. Yes, and Mr. Wade had it.
21202. *Mr. Lyngby* [Was it put on, Mr. Wade?] A. Yes.
21203. *Mr. Wade* [It was not put on; it was for my own information.]
21204. *Mr. Lyngby* [Q. I suppose the plan was prepared for the inquest, would be a good deal more reliable than a plan prepared ten months afterwards from memory, would it not? A. It would have a tendency to be, I should say.]
21205. Q. Do you know where that plan is now? A. No.
21206. *Mr. Lyngby* [Perhaps Mr. Wade could produce the plan that was prepared for the inquest, and not put on.]
21207. *Mr. Wade* [It was not prepared for the inquest, it was prepared for me—If I can find the plan I used at the inquest, I will produce it.]
21208. *Mr. Lyngby* [Q. Did it show the doors at the 4th Left? A. I could not say.]
21209. Q. Is that the only plan that you prepared showing the ventilation of Kimball Mine? A. Yes, I think so.
21210. Q. So we have got this, then, during the whole time you were supervisor in Kimball Mine, you never prepared a plan showing what the ventilation was? A. No, I was never asked to.
21211. Q. So that, if my private eye inspectors, wanted to know the scheme of ventilation in Kimball, he either had to go and look himself, or ask somebody? A. He could go and see the colliery plan, and it would be explained to him.
21212. Q. But it would not explain the matter itself? A. It could be shown in a short time.
21213. Q. You do not keep a work plan of the ventilation, as the Robertson says in the position?
21214. *Mr. Robertson* [I did not say it was the position—it could be done if it was necessary.]
21215. *Witness* [If we had any new system of ventilation, I could get orders to show a certain district, and the proposed alterations at the ventilation—That has passed from time to time.]
21216. *Mr. Lyngby* [What comes to me is this, that, from time to time, a plan ought to be prepared showing the ventilation of the mine, and that I should be responsible upon them to keep such a plan.]
21217. *Mr. Robertson* [It is no different; the conditions change from day to day.]
21218. *The Witness* [It could only be done by a tracing being taken from the colliery plan, and treated as a ventilation plan.]
21219. *Mr. Lyngby* [Yes.]
21220. *Mr. Joseph Smith* [Q. When you say it could be shown on the colliery plan, you mean that it is not shown, but that it could be pointed out? A. Yes.]
21221. *Mr. Lyngby* [Q. I would like to know what directions Mr. Robertson gave you concerning the preparation of these other plans? A. He simply said, "Make your starting point the 4th Right, and work outwards and outwards from that place, outwards to the 2nd Right showing directions of forces, and all details possible to get. Then proceed outwards from the 4th Right, and show, as before, all dimensions of doors and bounds of dips and ridges mine out, and go in the fire of Morris and mine plan, and the back heading and the front heading of No. 1 mine level, and also as far as Arrow and mine plan, on the left hand."]
21222. Q. Is that all? A. That is all.
21223. Q. Do you know that, in the plan you have prepared, a number of things are omitted which are shown on the Government Surveyors plan? A. That might be possible—He might have had a better light than I had.
21224. Q. Had you a bad light when you were looking for evidence of force? A. No, I had a fair light but I might possibly have omitted some, and possibly have some that he has not got.
21225. Q. Were not you taking your survey at the same time as the Government Surveyor? A. Well, partly—I was in at times when he was not there.



Witness—E. H. Wachstein, 22 February, 1933.

- 21136 Q If you started at the 4th Right, where did you get your distance from to get that start? A From the utility plan. I made the 4th Right the starting place, and measured from there. I checked my final measurements with the utility plan.
- 21137 Q You actually measured the whole of the road yourself, and then checked it with the utility plan? A Yes.
- 21138 Q But in the 4th Right, you say, could you not get the angles correctly, because of the black dump? A That was the first time.
- 21139 Q Why did not you the second time? A Thinking it of no great importance, I showed the 6th Right as a right angle.
- 21140 Q Did you go and get any evidence of force in the 4th Right? A Yes, subsequently.
- 21141 Q When there was no black dump? A There was black dump there, but not sufficient to extinguish a light.
- 21142 Q Where is the plan that shows the cut-through edge of the 6th Right? Where is the first cut-through edge of the 6th Right shown? A [Witness pointed out the position on Exhibit No. 20.]
- 21143 Q That are the cut-through edges of the 6th Right? A Yes.
- 21144 Q You have not shown on that plan the direction in which the stoppage on those cut-through was shown. A I have shown that, the force going that way. [Pointing to the arrow on the plan.]
- 21145 Q Do not you know that the stopping on the first cut-through edge of the 6th Right was not shown in the direction you show? A From what I remember, the surface of that stopping was shown that way [point], and some stone by the side had fallen on the main road. The surface was shown in the right of the main road towards the back heading, in the east, the stones had fallen roughly down.
- 21146 Q That does not your plan show the whole force as going from the main level into the back heading? A Not the whole, but part of it.
- 21147 Q That work shows the force from up the front heading. It is not an indication of force between the two headings? A There is an arrow here [pointing to it on the plan.]
- 21148 Q Do you mean to tell me that that arrow indicates anything more than the direction of force up the No. 1 Right? A There is an offset here [pointing to the plan.]
- 21149 Q Do you mean to tell me that that arrow going straight up there indicates anything but the main force going up the No. 1 Right main level? A Yes, the main force, and there is an offset here.
- 21150 Mr. Kohnen [Has you an arrow going across the cut through? A Yes.
- 21151 Mr. Kohnen] The point of the arrow is up here, showing the whole of the force going directly into the back heading.
- 21152 Mr. Kohnen] No.
- 21153 Mr. Kohnen] The force in the cut through is shown one way only, from west to east.
- 21154 Mr. Kohnen] Yes.
- 21155 Q Inasmuch as your plan shows that the force in the cut-through went from west to east, how can it be reliable when you say that there were evidence of stopping force from east to west in that cut through? A Well, it struck against the side, and kicked back, so to speak, that is my opinion. Those heavy wheels strike against the right-hand side, and go that way and that way.
- 21156 Q That has nothing to do with the force in the cut-through itself. Why did not you show on this plan that there was a force in the cut-through from east to west also? A Because I did not think there was. In my opinion there was not that force.
- 21157 Q Do you know that evidence has been given here that stopping was mainly shown—[Interupted.]
- 21158 Mr. Wade] I object to the question. It is absolutely immaterial.
- 21159 Mr. Kohnen] Perhaps I can get what I want in another way.
- 21160 Q Take the next cut-through—just show by that that the force was going from the front heading into the back heading? A Yes.
- 21161 Q You do not show any force from the back heading towards the front heading? A No.
- 21162 Q Then do I understand that both these cut-throughs appeared to give the main evidence of force? A Yes, as far as I observed.
- 21163 Q Do not you know that they gave different evidence or force entirely? A No, I do not.
- 21164 Q Well you tell me what evidence of force there was in that second cut-through edge of the 6th Right? A The top of the stopping was blown off the same as before.
- 21165 Q What were those stoppages in those two cut-throughs? A Stone, and wood, and stuff—skid.
- 21166 Mr. Kohnen] Q They were fixed up with big stones? A Yes, very big stones.
- 21167 Q On the side next the No. 1 main road? A Yes.
- 21168 Q And those big stones might have been tumbled over by the force of the explosion? A Yes, it is quite possible, and when, if the large stones were tumbled down by the explosion, the small ones might run down over the top of them.
- 21169 Mr. Kohnen] Q What about the indication of force in this third cut-through edge? A I could not observe very much there, except just the surface blown off.
- 21170 Mr. Kohnen] Q Known which way? A Towards the right hand.
- 21171 Mr. Kohnen] Q I see you have marked on the plan near the top of this back heading "arrows at arrows headed" what do you mean by that? A Well, these did not seem to be any great force, it seemed to me to be just excessive heat.
- 21172 Mr. Kohnen] Q What did I understand you to say with regard to the direction in which those stoppages were blown? A From the front heading into the back.
- 21173 Mr. Kohnen] From west to east?
- 21174 Mr. Kohnen] That is the force he shows.
- 21175 Mr. Kohnen] Q When you say the arrow did not show any great force—[Interupted.] A It did not show any signs of force.
- 21176 Q Yes, say it did not show any signs of great force? A Well, I say force.
- 21177 Q Do I understand there was any force at all? A I did not see any signs of force.
- 21178 Q Not any force? A No, just excessive heat.
- 21179 Q Do not you know a number of men were killed? A No.
- 21180 Q Did you see anybody who had been killed? A No.
- 21181 Q Not one? A Not one.



- 21200 Q Did you see any person whose hair had been burnt? A I saw Thomas Parrell, and his hair appeared to be slightly singed, it seemed to have turned a grayish color more than anything else, because when it came to him we had a man in the pit at the time named Dunning—I said to the man with me—  
 21201 “This is Thomas Dunning, because he is no grip, it cannot be Parrell.”  
 21202 Q Do you say that you never noticed signs of burning on any man or boy seen at all? A No, I cannot say that I did not see any signs of them.  
 21203 Q Did you notice signs of burning on any horses? A No.  
 21204 Q Did you notice signs of burning on any people? A I saw a little child burnt, and I saw a couple of props charred, but I would not take much notice of that, because, as a rule, most of the timber we get is put in the chock in the back before it reaches the mine, so I could not say any whether they were charred.  
 21205 Q Besides the miners at the top heading, did you notice signs of any other miners burnt? A No.  
 21206 Q You did not? A No.  
 21207 Q How often, as a rule, would you travel through the mine? A I could not say, because I have a lot of other duties as well.  
 21208 Q About how often? A Perhaps two or three times a fortnight.  
 21209 Q You know, I suppose, that the travelling roads were not watered? A They were watered naturally most of them.  
 21210 Q I mean, apart from the natural watering, they were not watered—you know that? A Because it was not necessary. They were quite damp, in fact too damp. We had every a complaint from the miners as to the dampness of the road.  
 21211 Q Did I understand you to say that there were no dusty travelling roads in Keable? A Not what I would consider dusty.  
 21212 Q What would you consider dusty? A Well, I would consider, as a dusty road, roads in which it would not be safe to allow men to travel with naked lights.  
 21213 Q In that poor bit of a dusty road, a road that it is not safe to allow men to travel on? A With a naked light.  
 21214 Q What do you mean by “not safe to travel in”? A Well, in case of anything happening in the way of a disaster at any time.  
 21215 Q What has that got to do with the travelling of the men? (No answer).  
 21216 Mr. Evans Smith: I do not think it prudent to be an expert.  
 21217 Mr. Lynght: But this is as to the conditions of the mine, he says the mine was not dusty in any part.  
 21218 Q I want to know what is your idea of a dusty travelling road; and you tell me a road that it is not safe for men to travel in. A Is there anything beyond.  
 21219 Q It would not be a matter of travelling, in case of disaster? A It would help the disaster, if you had a dusty road.  
 21220 Q Then do you mean that there should be a certain number of feet of dust on a travelling road before you would call it dusty—or a certain number of inches? A I cannot say.  
 21221 Mr. Webb: That I take Your Honor’s ruling as the point. Mr. Lynght is trying to make the witness an expert, and then to knock him down. He has not proved as an expert, and he has not been brought here as an expert. He was brought here as a mining surveyor, to give evidence about these places.  
 21222 Mr. Lynght: He gave me a description of the mine, by saying that there were no travelling roads that were dusty. Now, I want to know what is his idea of a dusty road.  
 21223 Mr. Webb: I understood Mr. Lynght wanted to find out from the witness the condition of the mine, as to the general condition.  
 21224 Mr. Webb: And then he asks him how much dust it would take to make a road dusty, which is a question to be put to an expert.  
 21225 Mr. Lynght: I ask Mr. Lynght not to go too far in that direction.  
 21226 Mr. Lynght: Very well, Your Honor.  
 21227 Q Would you call a road dusty that had only about an inch of dust along it? A No, I would not.  
 21228 Q You would not call that a dusty road? A If the road, and sides, and all were alike—  
 21229 [Interrogated].  
 21230 Q I am only talking about the floor: never mind about the roof and sides: would you call a dust that had an inch of dust on it a dusty floor? A If it were fairly divided dust, I would.  
 21231 Q If it were not so fairly divided particles? A If it were rough stuff, and stuff, I would not.  
 21232 Q At the request you give certain evidence about the taking of the mine—I want to know where you took the air? A Inside the mine.  
 21233 Q Do you understand what I mean, when I say “where did you take the air”—what part of the mine? A Well, there are so many different parts to take it. I will explain it to you.  
 21234 Q Did you take it at the main intake, or at the split, or the face, or where? A At the main intake, split, and where I thought necessary.  
 21235 Q Did you ever take it in the face? Q At the face of the mine?  
 21236 Q Yes. A I have taken the ventilation roughly at the face.  
 21237 Q What the atmosphere? A With the atmosphere.  
 21238 Q But your presence has been, I take it, to take it at the beginning of the split? A Yes.  
 21239 Mr. Webb: And where else necessary, he says.  
 21240 Mr. Lynght: Q And the reason is put in the book? A Yes.  
 21241 Q The reason you put in the book is the mixed nature of the main split? A Yes, and also the nature.  
 21242 Q What was the average ventilation of Keable at the time of the disaster? A I should say roughly about 50,000 cubic feet of air.  
 21243 Q That is pretty low ventilation? A Yes, it is about six months ago.  
 21244 Q By you know what it is now? A Well, we got a reading a short time ago of 105,000 cubic feet.  
 21245 Q When you ever know the air to be renewed in Keable? A When the furnace was a hot chink, and in summer when they were clearing fire, but it happened very seldom, perhaps three or four times since I have been there.  
 21246 Mr. Evans Smith: Q, Three or four times in how long? A In about six years.



James—S. E. Thurston, 20 February, 1905.

21217. *Mr. Lyngby.* [Q. Speaking of that knife, and the coat that was wrapped round the prop, did they appear to have been put there by, perhaps, some person wanting to indicate where he had been? A. No.]  
 21218. *Q.* Or to have been blown there? A. They appeared to have been blown. Of course it was difficult to tell. [Interposed.]  
 21219. *Q.* Did you see anything at all in the 3rd ledge to the left of No. 1 that had seemingly been put up by any one as an indication where they were? A. No.  
 21220. *Mr. Fink.* You say "headings." Do you mean marks or headings.  
 21221. *Mr. Lyngby.* Marks.  
 21222. *Q.* When you were carrying the 4th Right, did you notice the stones at the head of the gulf? A. Yes.  
 21223. *Q.* Were they clean? A. Yes, they were clean.  
 21224. *Q.* And how high were they off the floor of the 4th Right? A. Roughly, about 3 or 4 feet.  
 21225. *Q.* And did the three stones extend back some distance into the gulf? A. It seemed to be a very close fall.  
 21226. *Q.* Did they appear to be clean? A. No, there was a good lot of dust about.  
 21227. *Q.* At the edge of the gulf, the fall, when you surveyed it, was about 3 or 4 feet high; the clean stones were on top? A. There was a little bit of dust about.  
 21228. *Q.* The aperture in the gulf was not blocked up when you were surveying? A. It was blocked up. Between the roof and the top of the fall perhaps there would be 2 or 3 feet.  
 21229. *Q.* Is that so? Between the roof and the top of the fall there was 2 or 3 feet when you were surveying? A. No, there seemed to be a kind of overhang. [Interposed.]  
 21230. *Q.* I quite understand that, but I want to know whether, at the edge of the gulf, there were between 2 and 3 feet between the top of the fall and the roof? A. Well, I think there would be a good deal more than that.  
 21231. *Q.* How much more? A. I could not say it well.  
 21232. *Mr. Forester.* [Q. Do you mean the original roof at the edge of the fall?]  
 21233. *Mr. Lyngby.* Yes, I think he may not understand it.  
 21234. *Q.* I am speaking of the original roof going into the gulf. I want to know—was the fall 2 or 3 feet from the height of the original roof? A. It was more.  
 21235. *Mr. Lyngby.* [Q. It was about the level of the original roof? A. Yes, as far as I could see.]  
 21236. *Mr. Lyngby.* [Q. And the stones that you could see there were clean? A. Fairly clean, yes, a little dust.]  
 21237. *Q.* Do you know whether there were any stoppings put round that 30-acre gulf at the entrances to that gulf? A. I could not be sure.  
 21238. *Q.* As a matter of fact that roof had several openings out on to the 4th Right, and that let in air, without any stoppings at all? There were several openings along the 4th Right and the nearest heading into the gulf was like any stopping at all? A. There was just a few, to allow a scale of air to circulate and keep the coal clear.  
 21239. *Q.* It was not the practice to put stoppings? A. The practice was to put stoppings where required.  
 21240. *Q.* But not all the way round? A. If necessary.  
 21241. *Q.* I am asking what the condition was of that particular gulf from your memory? A. In this particular gulf there were a few places, so that the air could go through them and down the plan, and then go wing into the mine—take it into the mine.  
 21242. *Q.* You say a few; about how many were there like that on the west side of the gulf? A. I cannot say from memory.  
 21243. *Q.* Roughly? A. I would not say roughly.  
 21244. *Q.* On the north side, about how many were left open without stoppings? A. I cannot speak from memory; I should think about two.  
 21245. *Q.* And I think it is a fact that three cars were down on the 4th. Left were old ones; they had been doing duty for a good while? A. Oh yes, some of them were pretty good. As soon as they got old they would be replaced.

Examination by Mr. Bruce Smith.—

21276. *Q.* With regard to those two stoppings, ledge of the 4th Right, where you have shown an arrow indicating the direction of fire right up to the front heading—have you not? A. Yes.  
 21277. *Q.* And then you have shown two arrows indicating that the fire is right angle to that wall from west to east? A. Yes.  
 21278. *Q.* You have not shown any arrow to show any doubt about it going the other way? A. No.  
 21279. *Q.* I want your own testimony a few more say only? A. Yes.  
 21280. *Q.* I want to repeat west to east? A. Yes.  
 21281. *Q.* Where did you get that information? A. From my own observation.  
 21282. *Q.* Under your own observation? Whom were you with when you marked that? A. I was with Mr. Hay and Mr. Morrison.  
 21283. *Q.* How long ago? A. Shortly after the disaster.  
 21284. *Q.* But you prepared that ledge? A. That place has been prepared a long while.  
 21285. *Q.* And you say Morrison was with you when you indicated the fire as from west to east? A. He was in the pit with me, not in the office.  
 21286. *Q.* He was with you? A. Yes.  
 21287. *Q.* Are you aware that Morrison has given evidence that the fire was from east to west in both those stoppings? A. No, I am not aware of that.  
 21288. *Q.* Did he differ from you at that time as to what you saw? A. No.  
 21289. *Mr. Bruce Smith.* I think it is only fair to read this to the witness.  
 21290. *Q.* Did he? A. Certainly.  
 21291. *Mr. Bruce Smith.* [Q. Morrison said: Then, as you go up the main tunnel, the first stopping was above that way (west), and then the corner of the next stopping—I do not know whether it was above, out or fell out—last it fell into the road? What do you still think about it? A. Well, we have had no opportunity about it.  
 21292. *Q.* You look now? A. Yes.  
 21293. *Q.* You saw the debris at the time Morrison saw it? A. Yes, and I saw it in the mine, too, before the disaster.]



21284. Q I think you said that none of the streams were down on the west side of the original pattern of the stopping? A Yes.

21285. Q And none of the stopping was on the other side? A Yes.

21286. Q What makes you think that the fall was of the sort you say? A I am inclined to think that the stuff on the west side had fallen down of its own accord.

21287. Q And the other had been blown down? A Yes.

21288. Q Did you find stuff on both sides? A Yes.

Re-examination by Mr. Robertson—

21289. Q You started in the removal of some bodies in to No. 1 mine travelling road? A Yes.

21290. Q Do you remember the three men's bodies in the underground room? A Yes.

21291. Q Were there no indications of burning on them? A I did not notice any.

21292. Q Do you remember the lay Shocks? A Yes.

21293. Q Were there no indications of burning on him? A I saw that lay on the right of the disaster. I did not see any signs of burning on him. I believe Mr. Rogers and I were the first to discover that lay, and he was as black as coal dust, and we could see no signs of burning.

21294. Q Did you see any heat on him? A No.

21295. Q Well, the hair must have been burnt off? A I did not see any signs of burning.

21296. Q What had become of the lay?

21297. A Shocks? Q Did he previously go here? A I am not in a position to say that.

21298. A Shocks? Q He has been to say that you did not notice any signs of burning on the lay? A I did not notice.

21299. Q Of course you must have seen the bones in the flat area to the left? A Yes.

21300. Q What was the condition of that bone? A I did not examine that bone.

21301. Q You passed it very often? A I passed it, but it was too strong for me; I could not stand it. I was not the first time I passed it, as I told you.

21302. Q Were you on the left right with a party consisting of Mr. Atkinson, Mr. Hamilton, and myself about a week after? A No, I think that would be Mr. Hay.

21303. Q What indications of fire do you show on your plan in the left right? A I show a face outwards.

21304. Q What does your plan show? A (Referring to the plan) It was shown to Mr. Robertson.

21305. Q Are you sure that shock is in that position? (pointing to a mark on the plan)? A I have been given to understand that it was there.

21306. Q You were given to understand that? A Yes.

21307. Q I understand that you prepared that from your own observation? A No, this was what (naming the party men) told me.

21308. Q What does your own observation? A More or less the whole lying about here.

21309. Q So far as your own observation is concerned, you saw these on light on it? A Not with regard to these bodies.

21310. Q Did you see any props with the bottom left barrel in shock? A No, I cannot say that I did.

21311. Q There you must have any light at all from your own observation? A I believe I did see those props now; there was a lot of stuff lying on them.

21312. Q Props with the bottom left barrel in shock? A I cannot say that I saw a lot of props, though.

21313. Q From your own personal observation you could not speak? A No, I did not go there.

21314. Q As a matter of fact, as far as the left right was concerned, you asked again information supplied to you? A I saw props (pointing to the plan) between the travelling road and the road in the left right, by the way.

21315. Q Did you see a large stone about 4 yards inside? A No, I did not see that stone.

Examination by Mr. Hinkley—

21316. Q Did you see Mr. John Clark and Patrick Duffell after the disaster? A Yes.

21317. Q Were they all here? A Yes, they appeared to be there a lot.

Re-examination by Mr. Wade—

21318. Q Tell us about these occasions when you say they would be looking out the fire—when would that be, any special day of the week? A Yes, it would be on the Sunday.

21319. Q Were there any men in the pit then? A No, not those times I speak of.

21320. Q Did you ever make any examination with the safety lamp present? A Yes, I have made some examinations.

21321. Q How did it come about? A I was going up for an examination, and I wanted to find gas, if I possibly could, just to be able to say I had seen it, and I went into the most likely places in the mine to find it and could not find it.

21322. Q Was that more than once? A Yes, a number of times.

21323. Q Did you ever make any test when the furnace was being checked out, when the fire was being checked? A No, I did not.

21324. Q You usually take the measurements of the air? A Yes.

21325. Q Did you take any measurements anywhere down near the travelling road near the junction of the left right with the travelling road? A Yes, I took measurements in that.

21326. Q Which road way? A The left right.

21327. Q Was that recently, before the disaster? A Yes, it was my custom to take it there.

21328. Q Would that help you to say if there was any air coming or cooling? A My return would help me. I took the return here, as the left right, between the left and the back leading to No. 1.

21329. Q I want to know as a matter of fact, did you make any measurements in the left right road which would tell you whether the air actually was coming in there or not? A Yes.

21330. Q To what end at was it coming in that way? A I would, perhaps, find that there was a little going through these places here (pointing to the plan) from the travelling road.

(At 3 p.m. the Courtroom adjourned until 3 p.m.)

AFTERNOON.



## AFFIDAVIT

On returning at 7 p.m., Mr. W. R. Pratt attended to take shorthand notes of the evidence and proceedings.)

REDAWITING HENRY WARRINGTON, previously sworn, was further examined, as under:—

Re examination by Mr. Wade:—

21312. Q You said that you tested with the safety lamp for gas before your examination? A Yes.  
 21313. Q You said that you passed eighteen months ago? A Yes, eighteen months ago.  
 21314. Q It is at least eighteen months ago since you tested for gas? A I have tested since then.  
 21315. Q What made you? A Because I had never seen gas, and I have never seen it yet.  
 21316. Q Not in West Wallond? A No.  
 21317. Q You made a test for the purpose of getting experience? A Yes.  
 21318. Q That is eighteen months ago? A Yes, I have tested since then.

ALFRED HERBERT OSWALD BELLERS, who had been previously sworn, was further examined as under:—

Cross-examination by Mr. Lynght:—

21319. Q When you were making a calculation as to the fall of road in the gash, did you calculate that it was 20 ft. fall or an even surface? A Not necessarily so.  
 21320. Q You had had a previous fall of 5 feet 6 inches, and that first fall would be obliterated naturally all over the place? A Not necessarily so.  
 21321. Q Do you not know that Matthew has stated that the first fall was an uneven one? A No.  
 21322. Q Would that alter the figure of the population of air? A Not materially.  
 21323. Q Did you allow for that? A No.  
 21324. Q Do you know that the pipe of the vein was about 6 feet? A Yes, I assumed that.  
 21325. Q Would not the effect of a small fall, 4 feet 6 inches thick, on the top of a fall of 2 feet 8 inches, be to break up the surface of the gash? A You are presuming that the fall showed off as a line close to the edge of the 4 ft. Right.  
 21326. Q Do you know that the first fall did come out to the edge of the gash? A It may have done so.  
 21327. Q Would not a fall of 5 feet 6 inches in a small mass, falling evenly, break up the remainder of the height in the gash and obliterate the passage? A Not necessarily so.  
 21328. Q It is not the strong presumption that it would? A I did not trouble myself about the matter one way or the other.

Re-examination by Mr. Wade:—

21329. Q Just explain the way a roof does fall? A That is a wide question—it falls under various conditions.

21330. Q What would be the usual conditions? A There is a certain set of circumstances, and an ordinary roof, it would depend how the roof is bridged on the floor.

21331. Q Take this mine as representing the roof a full foot of a level. Supposing that the roof, as a matter of fact, has fallen over a height of 30 feet above the present roof—would you find a big square mass right up, or would it be the level up? A It would have a tendency to a dome.

21332. Q As it would have a tendency to a dome, you would not get so much slope? A No.

21333. Q It is nearer to Mr. Lynght, you said that, if the first fall is that 5 ft. Right came down solid, it would produce another result to those which took place on the surface of the second fall? A That was, as far as the matter of the displacement of air was concerned.

21334. Q It is necessary to assume that the first fall came down solid? A No, it is not necessary.

21335. Q Do the facts suggest that—suppose there was an displacement of several tons? A That would prove that the first fall was a general one.

21336. Q If there was not this displacement of volume from the first fall, would you expect the dust to be driven out, or would there be some left? A I would expect some dust to remain in the gash, as I have explained frequently.

21337. Q Supposing the second fall did come down solid on top of the first fall, do you think there was anything to prevent any dust being swept out? A No, there was nothing to prevent it. It would come out with the air—a portion of the dust.

21338. Q Supposing there was dust under the first fall—would there be anything to prevent the second fall driving that dust out? A It would not be so easy to do it. Take the condition of the first fall. There would be a lot of volume in the surface which fell. All the dust available by the air would be driven up, but not much would be driven out.

21339. Q Why not? A It would be obliterated by the first fall, and the dust would not necessarily come from the gash—I mean the dust and not necessarily come from it.

21340. Q Had you no indication of dust in the 4th Right road which could be stirred up by the blast? A There was some dust and debris, and things of that kind, which would have a certain amount of dust.

21341. Q You say now, from what you did see, that a few inches of dust had been disturbed in the 4th Right road? A There was dust which came out with the fall—that is visible round the junction of the 4th Right No. 1 heading. There was dust there that ought have been driven out.

21342. Q Look at plan, Exhibit No. 36. do you see anything showing dust at the corner of the 4th Right road and No. 1 first heading?—is that the place you are speaking of? A Yes.

21343. Q Why did you think that dust had been moved? A My impression was that before the explosion a certain amount of dirt and dust and small coal debris was lying on the other side of the road between No. 1 main heading and the gash in the 4th Right. A portion of the dust was left there, and it may be that dust was driven from places near the gash.

21344. Q Do you think that, if the dust you found at the corner of the 4th Right road had been driven from the direction of the 4th Left, you would expect to find signs of dust on the inside of the pillars? A Yes, on the other side of the pillars. No 1 main heading.

21345. Q Do you think that the dust in the 4th Right No. 1 main heading could have come down the main No. 1 main heading? A No, I do not think so.







- 21405 Q With respect to the speed of a piston, the question is whether you can pay attention to it, with only a fall of 4 feet in inches. The roof, which would be the piston, in this case, would be at rest to begin with? A Yes.
- 21406 Q It only reached that speed at the end of the 4 feet 5 inches, and, from the beginning of that space of 4 feet 5 inches to the end of it, there would be some period when the piston would be moving at a slow rate of velocity? A Yes.
- 21407 Q But the piston of an air-compressor is working at a uniform speed throughout? A Yes. But if you take the piston of an air-compressor, there is no flow of air in front of it, because the air has not time to get back.
- 21408 Q The piston in this case was 34 yards square, and was moving at a low velocity, and it was at rest in connection with— A There is a period in the stroke of the engine when it is at rest.
- 21409 Q Theoretically there is, but you have the momentum of the fly wheel to carry it on from the momentum stroke, and there is also the effect of all the engines to act in the same way? A Yes.
- 21410 Q In the case of the large piston, 34 yards square you had not a fly wheel to give you the impulse? A You had the force of gravity, which would have a great influence.
- 21411 Mr. Wolfe Q In the one case the weight is behind, and in the other case it is on the top of the piston? A Yes.
- 21412 Mr. Newell Q The only way in which this question of 16 feet per second means is, that if you consider the roof to be going at all at all more, without any intervening force, due to falling water, and then if you take out all the intervening force, such as air, it would be natural to relate to the force expended by the impact with the floor. What is the only way the 16 feet comes in at all? A The velocity at the moment of impact would be much greater than the mere rate of falling.
- 21413 Mr. Robertson Q What would be the ordinary pace of a piston in an air-compressor? A 300 to 400 feet per second.
- 21414 Q For the purpose of maintaining the effect, why not take 4 feet 5 inches as the average speed—then in one way, 5 feet for a resistance? A Yes, take it as that way.
- 21415 Q There is half a second for a fall of 4 feet 5 inches? A Yes.
- 21416 Q How much would that be? Now feet is a second multiplied by sixty seconds in 540 feet a minute—therefore, for all practical purposes, there is not much difference in the speed of this solid piston, forced by the roof and the roof of the air-compressor. So that, if the piston of the air-compressor failed, by reason of leakage of the piston, to work at any considerable pressure of air, the same effect would result in respect to the fall in the 4th Right? A The roof does not exactly compress the air. The high temperature would be got by friction when the air was being forced through a small passage. A certain body of air has to go through a small passage at a certain time. The passage creates friction; and therefore, it necessarily creates heat.
- 21417 Q Have you any authority to show what amount of friction can be generated in the absence of compression? A Not certainly in the absence of compression.
- 21418 Mr. Eads Q With regard to the things which you saw on the sides and edges of the 4th Right, were there any indications or nearly insensible vibrations in the Right? A There were two pieces of cotton on the 4th Right—some on the roof opposite the 4th Right and the other on the side opposite.
- 21419 Q Then either the pressure of air was on the 4th Right? A One of the pieces was in the 4th Right.
- 21420 Q In the same place? A There were two pieces of cotton that had been there.
- 21421 Q Did you find them actually there. Did you find any inflammable substance? A There was some timber there.
- 21422 Q Did you see any bark, or anything like that? A Not particularly. I cannot remember.
- 21423 Q Let us go back to Monmouth light for a moment. Supposing for the sake of argument that a surface of inflammable gas passed over Monmouth light at the rate of 50 or 60 miles an hour, do you think there would be time for the gas to ignite before the flame was put out? A I think that the flame would put out the light before the gas reached it—I mean the propagation of air is fast.
- 21424 Q Consider a that, that is not ignitable—that the column of air in advance does not put the light out. Supposing that the actual inflammable mixture reaches the light at 50 miles an hour? A I do not think the gas would light. It would take some seconds to light by lamp.
- 21425 Q I want you to lend me an authority on that point? A I remember reading quite recently that it takes two seconds.
- 21426 Mr. Robertson Q What to do? A To ignite fire-brush with an ordinary naked light.
- 21427 Q Yes, indeed? A It was in the situation of this kind, it dealt with the old system of testing, in the days before safety lamps came common, and when they tested fire-brush with a naked light. They would pass the light over the fire-brush, and then withdraw the light. The article went on to indicate that a certain temperature was necessary.
- 21428 Q In that in accordance with reason or common sense? A I was surprised when I read it. It stated that a certain time must elapse before fire-brush could be lit by a naked light. There is a certain temperature necessary.
- 21429 Q How long? A The article with a naked light—that is one account of the temperature of the light not being sufficient to light it continuously.
- 21430 Mr. Brown Q You speak the white light of a bare flame? A I am speaking of the ordinary flame's light.
- 21431 Mr. Brown Q You might ask yourself how the gas is lit in a gas engine, or an engine of that nature—how is it that they can work at all? They work up, I believe, in some cases to 500 strokes a minute? A The answer depends on a certain temperature of the hydro-carbons.
- 21432 Q The flame in the case of these engines is lighted by a spark; formerly a light was used. The running of a motor engine depends entirely upon the fact that so much spark lightens an explosive mixture of hydro-carbons and air. They work up to a 1,000 strokes a minute, and more. The action is absolutely instantaneous? A Yes.
- 21433 Mr. Eads Q Which would be the most intense, the flame of a lamp or the flame of a blow-out shot? A The flame of a blow-out shot.
- 21434 Q How many seconds would it take to light fire-brush by means of a blow-out shot? A I cannot say. It then depends on the temperature of the hot. A blow-out shot would be of a higher temperature than an ordinary steady light.



21430. Q As a matter of fact, do you believe that it takes ten seconds to light the ship? A I cannot say, but I need ten days ago.
21431. Q Is it a more or an ancient authority? A It is not ancient. I was during the last ten years.
21432. A. Substantive. Q You do not put that to a seriously—how long do you think it would take? A I cannot say how long it would take.
21433. Q I ask you, as a man of experience, how long do you think it would take. Supposing you went with a naked light into a body of gas, how long do you think it would be before something happened? A I should think immediately, but the question is whether or not it would take the time.
21434. Q Now about this—would it take the time during which you could try. Try with an ordinary gas light—do you want ten seconds to light? A I understand that it was a matter of ten seconds.
21435. Q Try it with these gas lights there. You think it would take ten seconds? A No.
21436. Mr. Wade. Q Do you put that forward as your own view, or only as something that you have read? A Only as something which I have read as a book.
21437. Q You do not say that it is your own view? A No.
21438. Mr. Jones. Q It would be easy to get a scientific opinion on this.
21439. Mr. Wade. Q It would, if necessary. The witness says that he does not think it is his own view of the case.
21440. Q Supposing that an expert in gas took place at Harrison's store, and that the flame of the gas was back to the 14th Right, and the center of the accident was the 14th right position on the main road? A Yes.
21441. Q And that that body of flame was the start of the explosion—do you think that the indication which you saw at Kewick was consistent with that? A I really could not say. I would not answer a question like that. It has a wide application.
21442. Q One you give an up idea? Supposing the gas was drawn out of the 14th Right into the main road, and it lights in the top road, and near you up the top road and runs down it, what would be the quantity of gas you would expect at the 14th Left to create a flame and carry it to the 14th Left? A About 5 per cent. of gas.
21443. Q How many cubic feet would you want? [Interposed.]
21444. Mr. Jones. Q You are assuming that the whole of the volume of the tank would be filled with gas down to the base. That is not the assumption that you have made. The assumption was that there was gas along the road.
21445. Mr. Wade. Q Take the distance to 300 yards.
21446. Mr. Jones. Q Or where do the distance is.
21447. Mr. Wade. Q What would be the maximum quantity of gas between the 14th Left and the 14th Right in order to carry a light for a distance of 300 yards? A It would only require a stream of gas, it would not require to be large in volume.
21448. Q You have no idea? A Oh, the gas might be 3 or 4 cubic inches, or there might be a body of gas 7 or 8 cubic feet, or less than that would do.
21449. Mr. Substantive. Q It is easily ascertained. Take the distance at 300 feet, and say 3 inches in thickness, that would be 1,000 feet (cubic). That, at a proportion of 5 per cent., would be 500 cubic feet of gas? A Yes.
21450. Mr. Wade. Q Would you expect, if the portion of the 14th Right was the cause of an explosion, to find signs of flame at the 14th Right road? A If the gas was ignited with a light at No. 4 Left, the flame would run both ways the gas. The flame would go from the 14th Left to the 14th Right.
21451. Q Yes, if there were an explosion at the 14th Right portion of the main road, what would you expect to find? A I should expect to get some signs of flame at points from the 14th Left to the 14th Right.
21452. Q Would you expect to find indications at the 14th Right road? A There would be none, I should imagine.
21453. Q Now, if the gas was travelling up the 14th Left at a pace of 50 miles an hour, would you expect to have some flame mixed up with the air? A Yes.
21454. Q If you had been at the air, and a long flame lit at the 14th Left, would you expect, under these circumstances, to get an actual and that explosion for a short? A If the gas came out with that force, and gathered up dust and an explosion took place at the 14th Left, there would be a pretty strong explosion with result.
21455. Q Supposing it was rather? A Then there should be some signs of flame between the 14th Left and the 14th Right, where there would be a gradient of flame.
21456. Q Supposing there was a reflection where Matthew was, and some went on and some went north, would you say that there would be sufficient down to cause an explosion? A Yes.
21457. Q Would you expect to find a gathering of the shavings under that road there? A Yes, I should expect so.
21458. Q Would you find some signs of fire in any way of the 14th Left? A Yes.
21459. Mr. Jones. Q Would you not expect, if it did take place, and if most of the explosive mixture still remained underneath about the opening of the 14th Right, that a second explosion would obliterate all signs of shavings there between the 14th Right and the 14th Left, and that the kind road would be an indication of flame going down the 14th Right towards the 14th Left? A Yes. If the second explosion were greater than the first, it would destroy the evidence of the first explosion.
21460. Q It would be a running explosion. It would not take more than a second for the whole thing? A No.
21461. Mr. Wade. Q Would an explosion at the 14th Left take any effect upon shavings going up the 14th Right? A It would have some effect.
21462. Q If you have an explosion working out of the 14th Right, would it have any effect on the shavings between the 14th Left and the 14th Right? A It would have some effect. As Mr. Jones has said, the evidence of flame might be obliterated by a second explosion.
21463. Q We have evidence that shavings were destroyed, and that there was a weakening of the telephone wires between the 14th Right and the 14th Left, and that they were carried up. What I want to know is, if the shavings between the 14th Right and the 14th Left should not have been carried up? A Not necessarily.



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anonymously. You might have a first explosion in the 4th Left and carry that explosion on to the 4th Right, and the tank of the second explosion would cover over the effect of the first explosion, and carry the ships up.

21466. Q. When would the ships be off the line? A. They would be knocking about. There might be damage, and that damage would depend on the direction of the explosion.

21467. Q. If you had an explosion of gas at the 4th Left—gas and coal-dust—would you expect it to be violent? A. Not at the first instant, it would depend on the amount of gas present. Supposing a certain amount of coal dust were ignited, that would increase in a short time, and it would gather force as it traveled out, and where it would meet with more oxygen.

21471. Q. Do you think it would gather more force than it got at the 4th Right? A. It would gather more force.

21472. Q. What would be the natural tendency going out against the sea? A. It would get more force.

21473. Q. Would you expect it to double back again? A. Not unless there was a large body of gas to send it, and create a second large explosion.

21474. Q. If you had a body of gas, to make another explosion on the 4th Right junction, would you not expect to find signs of flame at the 4th Right road? A. I should expect to find some.

21475. Q. Would there be any reason for those signs being blown away from the 4th Right under these conditions? A. There would be no particular reason. Although we have had some illustration of that fact. It is hard to tell from the extraordinary facts when an explosion actually takes place.

21476. Q. (To the witness.) That might be taken as a general suggestion. Have you to tell, when anything in the nature of an accident takes place, what will happen? You generally find that when an accident has not been what was expected.

21477. A. Yes. Q. That refers to that particular gas explosion at Carnarvon, where force occurred at intervals? A. Yes. The people say that, if you take the notion of force, it will not help you—you are no further advanced—you are arguing in a circle.

21478. Q. (To the witness.) They all condemn one another? A. Yes.

21479. A. (To the witness.) I was quoting that man as a general proposition.

21480. Q. (To the witness.) You used the expression several times the other day that the coal fell in a solid block. What do you mean by that? What is the usual process in a roof falling? A. That depends entirely on the character of the roof. Usually a roof falls piecemeal, especially if it is of a friable nature and jointed.

21481. Q. What do you mean by a solid block? If the roof was the roof, do you mean that it would come down like one solid piece? A. Yes, come down as a piece.

21482. Q. Without a break? A. It might break as it fell.

21483. Q. You mean the displacement of a solid piece without a break or any intervals? A. Yes.

Examined by Mr. Ernest Smith.—

21484. Q. Did you express an opinion as to the effect of watering as a preventative to connection with such dust-explosion? A. I think so.

21485. Q. I think you said that water would not act as a preventative? A. I said that it could not be depended on as a preventative.

21486. Q. An explosion took place at the Malvern Colliery, one of the pits belonging to the Tredegar Iron and Coal Company, Monmouthshire, and the General Manager of the Company reports as follows—in a statement in the journal called "The Colliery Manager"—

Four hours and a half previous to the explosion the whole of the work level has been previously watered, both floor and walls, and it has been observed that of course, that the deep state of this level has been the cause of saving the pit.

A. I do not disagree with that.

21487. Q. I thought you expressed the opinion that watering had no effect, because fire would go over it? A. I think I said it could not always be depended upon.

21488. Q. You heard McGowan assert the opinion that there had been no flame, because certain things had not been thoroughly burnt? A. I was not here yesterday.

21489. Q. Have you read Johnson Brothers' "Explosions in Coalmines"? A. Yes.

21490. Q. That is entirely right.

The witness of fact was a solution after watering covering level, when gas took fire and flame was passed.

Showing that, although the flame has passed, the dust has not mixed because of the quick passage. A. Yes.

21491. Q. And on page 18 that authority says:

We spent about an hour on the main bridge road where there had evidently passed, and where there had been gas. In the extraction of the explosion vessel dust was abundant.

You see from that that, although the dust is not stirred in the place where it is found, flame may have passed over it. A. Yes.

21492. Q. You have not been asked for an opinion about gas coming from above the coal seam? A. Yes. I was asked my opinion as to whether it had been taken. I was speaking of the Illwaco district. I said it had not.

21493. Q. In a mining lecture delivered by Mr. F. W. Hardwick at the Fife College, Stirling, he says:

The regular source of fire damp is gas or methane in the coal. Gas however is found in the strata. It is consequently that with its withdrawal into the roadway from a bed of bituminous shale it takes more of the regular working.

and he further says:

If the roof consists of a hard rock, which, when it breaks down, does not break light, but leaves open spaces, the danger of the gas as a source of gas will be greatly increased.

A. That presumes that the strata give off gas.

21494. Q. That is an authority for gas being given off in the strata above the coal? A. Yes.

21495. Q. (To the witness.) From strata in the strata.

21496. Q. (To the witness.) But the gas comes from the coal? A. We want an authority for gas in the strata above the coal.

21497. Q. (To the witness.) If the roof is shaly it would be soft at first, and gas might be found.



- 21485 Mr. Robertson: Q Would it be likely that there would be any cracks? A There would not be any vertical fissures.
- 21486 Mr. Bruce Smith: Q You remember that Mr. Atkinson, when he was examined, said there was no authority for this?
- 21487 Mr. Adams: Q This gas had an area of 44 yards square, without any support, and it is impossible that there could be any crack in the main. A The main contains nothing to give off gas.
- 21488 Q With you say that it is highly improbable that there was any gas on the street? A I should say it was impossible that there was any gas on the street, above the coal seam.
- 21489 Q You saw, before the explosion, the way from the coal seam? A The main itself gives off no gas.
- 21490 Mr. Bruce Smith: Q You are telling about a ship which indicated the way that the flames had driven. Is it not possible that a body of gas came out of the No. Four Right and inspired in a line point up to Morrison's light, left, and went on by itself and a big body of gas and the explosion took place there?
- 21491 A Yes.
- 21492 Q Do not think that the way that gas would run? The combustion would carry the point of it to Morrison's lamp? A I would not hold myself to it.
- 21493 Q The explosion would not necessarily be at the inspiring point, but at the point to which the gas would? A Yes, and it would drive things along of that light—except of the place.
- 21494 Q Where you have a number of different explosions they are not necessarily of the same force and intensity? A No.
- 21495 Q Where you have a series of explosions, and a number of outburst from a work, the results may preponderate in one direction, and yet they may be the outcome of a number of back latches? A Yes.
- 21496 Q Is it not possible that certain objects which it is thought, should have gone along, may in the first place have gone along and then have been driven outwards and along again, and then be driven to their present position? A Yes, it is possible.
- 21497 Q You know a man named Strain, and you found him inside of No. 4 Right? A There may have been an explosion at Morrison's light, and that would blow him away.
- 21498 Q Do you think, if the explosion nature had Morrison's light, it would blow up all the gas available, and there would be some left to go further on? A I should think that the first light would be the light to light the gas.
- 21499 Q Do you mean all the gas there was to travel? A Yes, unless there was a large quantity.

Examined by Mr. Robertson:—

- 21500 Q Did you observe, over the area of this explosion, newspaper and other combustible material lying about? A Yes, I saw some fragments of paper on the left hand side of No. 1.
- 21501 Q Did you notice some newspaper of the cut through at the back heading of No. 1, where the heading was broken? A I cannot say I did.
- 21502 Q Would you think it probable that newspaper could be exposed to the flame of a gas-wire and not the effect of an explosion, and yet remain unburnt? A It seems to be hardly feasible, but you have authority for these things happening, and for the flame passing without action.
- 21503 Q If it were demonstrated to you that it was possible that a newspaper could be exposed to a gas-wire flame and a dust explosion, would you say that the newspaper that an explosion is a non-producing flame may not fall to become combustible material? A The flame may not extend the full width of the area. It may be confined to the centre of a road.
- 21504 Q Then you think it is reasonable to find highly combustible material unburnt? A Yes.
- 21505 Q As a matter of interest I may say that I got a newspaper in front of a gas-wire explosion with which I ignited that, and the newspaper remained unburnt, so there is nothing incompatible with combustible material in a mine remaining unburnt where an explosion has occurred.
- 21506 Q Were you asked about the pillars in the Metropolitan Colliery? A I do not know.
- 21507 Q You have had signs or some young explosion. Did you observe that the pillars were large? A Yes.
- 21508 Q From your experience, do you consider that large pillars are more safe? A Oh, yes, decidedly.
- 21509 Q And, in spite of the large pillars in the Metropolitan Colliery, did you notice any of the signs of weight? A Yes, in the short district.
- 21510 Q Strain trouble arose there? A Yes.
- 21511 Q Can you tell the size of the pillars? A They might be 30 yards by 30 yards.
- 21512 Q Pillar by me looked partly in the ordinary way. Do you know whether any difficulty was experienced in working these pillars? A No, only the ordinary difficulties.
- 21513 Q And that, in spite of the fact that the Metropolitan Mine is a gassy one? A Yes.
- 21514 Q And the satisfaction is really conducted to the fact? A There is no greater difficulty than is found elsewhere.
- 21515 Q What would be the effect if legislation were passed which would prevent the use of pillars up to 30 yards? A It would take away the right of the management to make pillars as strong as they could.
- 21516 Q I am asking the Metropolitan Mine? A No, we should have more crops and less coal.
- 21517 Q Do you think we could work the mine at all with 30 yard pillars? A Yes, it might work it.
- 21518 Q Would there be any more danger? A Yes, to the miners and to the mine.
- 21519 Q Do you think it was that restrictions should be placed on the Manager's discretion as to the manner of working a mine? A No. It is a matter which cannot be accomplished by legislation. The condition says so much that the matter should be left to the Manager's discretion.
- 21520 Q Is the working of the mine governed by conditions? A Almost entirely.
- 21521 Q Do you think, in the face of what has happened that it would be prudent in the future to work Keweenaw with mixed pillars? A I think it would be safety lamps. One would be satisfied that they had done all that could be done to keep things safe.
- 21522 Q Here is a mine that had the general reputation of being very safe—going off very little gas, some say no gas at all. Yet we have a dust and explosion. If there are other mines of a similar character in the district, would it be safe to work them with naked lights? A Not if there is gas present.
- 21523 Q What is a gassy mine? A I should say a mine that gives off gas in detectable quantities.



Session—A. R. G. Before 26 February, 1903

21536. Q With the hydrogen lamp? A Yes. It would start a little circulation, but, if there were a smother, it would be on the safe side.

21537. Q Is that the normal condition of things that we have to provide for? A No, it is abnormal conditions.

21538. Q Under ordinary conditions a grey mist is safe? A Yes.

21539. Q Do you think it necessary to provide for contingencies that may arise in the last registered safety? A Yes; and if gas is given off it would be a fair thing to work with safety lamps.

21540. Q An accumulation of gas may occur in a slightly grey mist? [Re-examined.]

[The Commission, at 2 15 p.m., adjourned until 2 o'clock on the following Monday.]

MONDAY, 2 MARCH, 1903, 2 p.m.

[The Commission met at the Supreme Court, King street, Sydney.]

Present:—

C. E. B. MURRAY, Esq., D.C.J. (PRESIDENT).

D. A. W. ROBERTSON, Esq., COMMISSIONER. D. RITCHIE, Esq., COMMISSIONER.

Mr. Bruce Smith, Barrister-at-Law, instructed by Mr. Walsh, Crown Solicitor's Office, appeared on behalf of the Crown.

Mr. A. A. Atkinson, Chief Inspector of Coal mines, assisted Mr. Bruce Smith.

Mr. A. A. Langley, Solicitor, appeared on behalf of:—

(a) the representatives of deceased miners, children, &c. (victims of the explosion);

(b) the employees of the Mount Kosciuszko Colliery (miners, whelms, &c.), and

(c) the Harrows Colliery Employees' Association (the Southern Mines' Union).

Mr. C. G. Walsh, Barrister-at-Law, instructed by Messrs. Gorton and Haug, Solicitors, was present on behalf of the Mount Kosciuszko Coal and Oil Company (Proprietors of the Mount Kosciuszko Mine).

[Mr. J. Shellock, Secretary to the Commission, was present to take shorthand notes of the evidence and proceedings.]

Mr. WILLIAM HAY was sworn and examined, as follows:—

Interrogation chief by Mr. Walsh:

21541. Q What is your name? A William Hay.

21542. Q What are you? A Clerk and weighman.

21543. Q Employed in Mount Kosciuszko? A Yes.

21544. Q Do you hold any certificates under the Coal Mines Act? A Yes; several class certificates of competency.

21545. Q How long have you been at Mount Kosciuszko? A Fourteen years altogether.

21546. Q Where are your duties, as weighman—would not they be outside the mine? A I would not be at the weighing scales more than half my time.

21547. Q What would you be doing during other parts of your time? A Making up the pay-accounts; and going in with the under-manager, measuring up the miners' work.

21548. Q How often do you help the under-manager to measure? A Two days a fortnight, and I used to go in six days, say days the pit was off, doing, everything that they were doing, measuring.

21549. Q Do you know the faces of the No. 1 heading up to the entrance and of No. 1 Right? A Yes.

21550. Q Do you know that those two headings were off before the first of July? A Yes, the No. 1 mine heading.

21551. Q Had you been up there one (two) before the first of July? A Yes, I was up there with the under-manager on the first of July I think it was.

21552. Q Who was the under-manager, do you mean Mr. Nelson? A Mr. William Nelson.

21553. Q What day was that? A A few Saturdays.

21554. Q Were there any men in the mine? A No, only us two; and men who were engaged repairing the ventilation.

21555. Q What do you mean by that—was the fire out? A Yes the fire was out.

21556. Q Do you remember where you were that day with Mr. Nelson—any particular parts of the mine? A We went down the water heading from No. 1 Right, and followed the water as from the side, and ascended a few yards in the No. Right, and into the main heading, the main No. 1 heading, and into the back heading.

21557. Q What did you have with you—what light? A We had the safety-lamps, the Davy lamps.

21558. Q Did you see the safety-lamps at the No. 1 heading at all? A Yes, the under-manager tested for gas at the No. 1 heading.

21559. Q With what result? A We did not find any.

21560. Q Whereabouts was it, do you know? A Both the front heading and the back heading.

21561. Q Whereabouts were you with regard to the fire? Q In the corner, the right-hand corner, and the left-hand corner.

21562. Q At the fire? A Yes.

21563. Mr. Bruce Smith. Q Behind the fence? A Behind the fence.

21564. Mr. Walsh. Q Towards behind the fence? A Oh, the fence at the bottom of the headings?

21565. Q Yes? A Oh, yes, right up at the fence.

21566. Q Did you notice whether there was any canvas up near the face of the back heading? A Yes. The canvas was there to carry the ventilation up to the face from the last cut-through in the back heading.

21567. Q What state was it in? A It was intact, everything was all right.

21568. Q In good order? A Yes, in good order.



Witness—A. E. G. Nelson, 26 February, 1903.

21536. Q With the hydrogen lamp? A. Yes. It would start a little circulation, but, if there were a mistake, it would be on the safe side.

21537. Q Is that the normal condition of things that we have to provide for? A. No, it is a abnormal condition.

21538. Q Under ordinary conditions a grey mare is safe? A. Yes.

21539. Q Do you think it necessary to provide for contingencies that may arise in the best regulated refinery? A. Yes; and if gas is given off it would be a fair thing to work with safety lamps.

21540. Q An accumulation of gas may occur in a slightly grey mare? [Re answer.]

[The Commission, at 2:45 p.m., adjourned until 2 o'clock on the following Monday.]

MONDAY, 2 MARCH, 1903, 2 p.m.

[The Commission met at the Supreme Court, King street, Sydney.]

Present:—

C. E. B. MURRAY, Esq., D.C.J. (PRESIDENT).

D. A. W. ROBERTSON, Esq., COUNSELLOR. D. BUTCHER, Esq., COUNSELLOR.

Mr. Bruce Smith, Barrister-at-Law, instructed by Mr. Wade, Crown Solicitor's Office, appeared on behalf of the Crown.

Mr. A. A. Atkinson, Chief Inspector of Coal mines, assisted Mr. Bruce Smith.

Mr. A. A. Lough, Solicitor, appeared on behalf of:—

(a) the representatives of demand owners, shakers, &c. (system of the explosion);

(b) the employees of the Mount Kosciuszko Colliery (miners, shakers, &c.); and

(c) the Harrows Colliery Employees' Association (the Southern Mines' Union).

Mr. C. G. Wade, Barrister-at-Law, instructed by Messrs. Gorton and Haug, Solicitors, was present on behalf of the Mount Kosciuszko Coal and Oil Company (Proprietors of the Mount Kosciuszko Mine).

[Mr. J. Gelsick, Secretary to the Commission, was present to take shorthand notes of the evidence and proceedings.]

Mr. WILLIAM HAY was sworn and examined, as under:—

Examination chief by Mr. Wade:

21541. Q What is your name? A. William Hay.

21542. Q What are you? A. Clerk and weighman.

21543. Q Employed at Mount Kosciuszko? A. Yes.

21544. Q Do you hold any certificates under the Coal Mines Act? A. Yes; several—about certificates of competency.

21545. Q How long have you been at Mount Kosciuszko? A. Fourteen years altogether.

21546. Q Where are your duties, as weighman—would not they be outside the mine? A. I would not be at the weighing scales more than half my time.

21547. Q What would you be doing during other parts of your time? A. Making up the papers, &c.; and going in with the undermanager, measuring up the contents of the

21548. Q How often do you help the undermanager to measure? A. You days a fortnight, and I used to go in six days, say days the job was off, doing, working that they were doing, measuring.

21549. Q Do you know the faces of the No. 1 heading up to the entrance end of No. 1 Right? A. Yes.

21550. Q Do you know that those two headings were idle before the 31st of July? A. Yes, the No. 1 mine heading.

21551. Q Had you been up there one time before the 31st of July? A. Yes, I was up there with the undermanager on the 31st of July I think it was.

21552. Q Who was the undermanager, do you mean Mr. Nelson? A. Mr. William Nelson.

21553. Q What day was that? A. A few Saturdays.

21554. Q Were there any men in the mine? A. No, only us two; and men who were engaged repairing the air-frames.

21555. Q What do you mean by that—was the fire out? A. Yes the fire was out.

21556. Q Do you remember where you were that day with Mr. Nelson—any particular parts of the mine? A. We went down the water heading from No. 1 Right, and followed the intake air from the side, and ascended a few levels in the No. Right, and into the main heading, the main No. 1 heading, and into the back heading.

21557. Q What did you have with you—what light? A. We had the safety-lamps, the Davy lamps.

21558. Q Did you see the safety-lamps at the No. 1 heading at all? A. Yes, the undermanager tested for gas at the No. 1 heading.

21559. Q With what result? A. We did not find any.

21560. Q Whereabouts was it, do you know? A. Both the front heading and the back heading.

21561. Q Whereabouts was you with regard to the fire? Q. In the corner, the right-hand corner, and the left-hand corner.

21562. Q At the fire? A. Yes.

21563. Q At the fire? Q. Behind the fence? A. Behind the fence.

21564. Mr. Wade: Q. Under behind the fence? A. Oh, the fence at the bottom of the headings.

21565. Q Yes? A. Oh, yes, right up at the fence.

21566. Q Did you notice whether there was any current up near the face of the back heading? A. Yes. The current was there to carry the ventilation up to the face from the last cut-through in the back heading.

21567. Q What state was it in? A. It was steady, anything was all right.

21568. Q Is good order? A. Yes, in good order.



- 21569 Q. Do you remember having any conversation with Nelson that day at which the question of gas was introduced? A. Yes, we were speaking about gas, and I asked him if he had seen any gas in Kewbida, and he said "No."
- 21570 Mr. Ziegler I object, your Honor. I take your Honor's ruling as to whether this evidence can be given of statements made by a man who is dead.
- 21571 Mr. Wade I My friend has been quite ready to take evidence as to statements made to men who are dead, and, therefore, I ask, in the same line of reasoning, to admit statements made by Mr. Nelson, from the other point of view.
- 21572 Mr. Moore I I hardly think that, on an inquiry of the kind, the man being dead, the evidence ought to be rejected. The man was there, doing his ordinary business, and holding conversations as common to his ordinary business, I understand, with another man employed on the same mine, not making conversations as to any outside matter for any purpose, but merely having a conversation in relation to the subject matter of their work there, and in relation to the mine. Under those circumstances, I certainly think that, in an inquiry of this sort, as the man is dead and it is impossible to communicate with him, such evidence ought to be admitted.
- 21573 Mr. Wade I Q. Do you remember what the conversation was? A. Yes, I asked Nelson if he had ever seen any gas in Kewbida, and he said "No." The reason that I asked him that was because I was very anxious to see if I could see it.
- 21574 Mr. Lyngdahl I I object to the reason, your Honor. It is not part of that conversation.
- 21575 Mr. Moore I Q. Did you say that, and you not severely say it to Nelson? A. Did you say that to Nelson? A. Yes.
- 21576 Q. That you were anxious to see gas, or that you had not seen gas before? A. I had seen gas before I came to this country.
- 21577 Q. Did you say you had not seen gas there? A. Yes.
- 21578 Q. Is that the reason you were anxious to see whether it was there or not? A. Yes.
- 21579 Q. Then what you say is that you were, in search of truth, whatever you thought, making as far as you were concerned, a particular search for gas? A. Yes.
- 21580 Q. By means of, or through, Nelson, because Nelson said the lamp? A. Nelson said the lamp, yes.
- 21581 Mr. Wade I Q. Did you use particular object to view where you were trying to get an instance of gas? A.
- 21582 Mr. Ziegler I I object to the object he had in view.
- 21583 Mr. Moore I It is to explain his being there.
- 21584 Mr. State Smith I I understand now that he says he said to Mr. Nelson what his object was.
- 21585 Mr. Wade I That is not what I am asking, it is something else that I wish to see.
- 21586 Q. You said you wanted to find gas. Was there any other reason that you wanted to find gas—any reason to benefit yourself—anything in the way of enjoyment of gas? A. Yes, I wanted to see it. It was a long time since I had seen it. I wanted to see it just for experience previous to going up for the examination.
- 21587 Q. You spoke of going around with the under-manager and managing, about perhaps twice a fortnight? A. Yes.
- 21588 Q. To whom were you referring then? A. Mr. Leitch and Mr. Nelson, too.
- 21589 Q. How long had Nelson been under-manager of the mine as the 10th of July? A. I could not say exactly. I think about four or five weeks roughly.
- 21590 Q. Then you ever been round the 4th Right with Leitch, which he was under-manager? A. Yes; I have been in the 4th Right pillars with Leitch a few times as under-manager.
- 21591 Q. How often would you be there, could I now say, could you give me an average? A. I was not there a great many times. I could not exactly give an average.
- 21592 Mr. Moore I Q. Do you mean once, twice, or three times? A. I mean more than that.
- 21593 Mr. Wade I Q. Give us some idea? A. Say once a month I was on the 4th Right pillars.
- 21594 Q. Going back how far? Leitch left in the beginning of June? A. Yes.
- 21595 Q. How long before that had you been going round once a month? A. About eighteen months previously.
- 21596 Q. Did you ever, in any of those trips in the 4th Right, see any indications of pillars or coal having been broken or cut? A. No, I did not.
- 21597 Q. Did you ever take the sub-telephone into the 4th Right district? A. No, I was never in the 4th Right with a sub-telephone.
- 21598 Q. Were you in the No. 1 Right heading after the disaster? A. Yes.
- 21599 Q. How soon after, do you remember? A. I was in the next morning, but not for long—not five or six hours.
- 21600 Q. When next after the disaster did you see the miners at the face of the back heading? A. I think it was Friday or Saturday, I am not sure.
- 21601 Q. It would be within a couple of days? Yes.
- 21602 Q. Did you see any difference then? A. Yes.
- 21603 Q. What was it? A. The miners' dust was partly gone.
- 21604 Q. Whereabouts would that be? A. At the bottom of the last cut-through.
- 21605 Q. Across the bottom, do you mean? A. Yes, coming up the ventilation. It stopped the ventilation from going through the cut-through, and caused it over the face.
- 21606 Q. What was the difference between that, when you went on the Saturday after the disaster from when you had seen it before on the 10th of July? A. When I saw it on the 10th of July it was all intact, right round, right to the face.

Cross-examination by Mr. Lyngdahl—

- 21607 Q. When did you go up for examination, Mr. Day? A. In January last.
- 21608 Q. You had been up before, I think? A. Yes, I had been up twelve months previously.
- 21609 Q. How you got your note in writing of this visit on the 10th of July? A. I think I saw Mr. Anderson turn Mr. Nelson's report back up—[Interrupted].
- 21610 Q. That is not what I asked you. I asked you if you had any note of this visit of the 10th of July? A. None whatever.

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Witness—W. Day, 8 March, 1906

- 21001 Q By I understand you made no note? A I made no note.
- 21012 Q But you say that a note of that sort was made in a report book? A Yes.
- 21013 Q By whom? A By the under-manager.
- 21014 Q Did you see it made? A I did not.
- 21015 Q How do you know it was made? A Because it is there in the under-manager's writing.
- 21016 Q And in what report book is that? A It is in the under-manager's report book. He keeps a report book.
- 21017 Q Where is that now? A I do not know.
- 21018 Q Where did you see it last? A When I saw it last I think I saw the Chief Inspector with it in the office—in the railway office.
- 21019 Q When was that? A The day after the disaster.
- 21020 Q Where is that book now? A Well, I have not got it.
- 21021 Q Are not you the clerk in charge of those books? A No, certainly not.
- 21022 Q Who has got the custody of those books? A I do not know.
- 21023 Q Who has the custody of that under-manager's report book? A The under-manager himself.
- 21024 Q He is dead? A Yes.
- 21025 Q You saw it the day after the disaster in Mr. Atkinson's hands? A Yes.
- 21026 Q In the railway office? A In the railway office.
- 21027 Q At Mount Kemble? A At Mount Kemble.
- 21028 Q There are a number of books put in here? A I think it is among those.
- 21029 Q Mr. Bruce Smith? Q Would you know if it was not it? A Yes.
- 21030 Q Mr. Wade? Q You have not been fingering it since then? A No, in fact I was surprised to see my name mentioned there.
- 21031 Q Mr. Speake? Q Could you pick it out from this list, Mr. Day? [Reading a number of heads in the witness's list.] A Yes, I think that is a plain example. [Reading a book to Mr. Speake.]
- 21032 Q That is the one, is it? A I think so, I am not sure—I could not swear.
- 21033 Q You say that you were surprised to see your name mentioned? A Yes.
- 21034 Q Where did you mean mentioned? A It is not mentioned there?
- 21035 Q Do not ask me a question, please. Where was your name mentioned? A Well, the Chief Inspector was reading it, I think, and he said my name was there. That is the only name.
- 21036 Q Did you see your name mentioned? A No.
- 21037 Q Well you look and see if you see that your name mentioned anywhere in it? A [Witness looked at the report book.]
- 21038 Q Mr. Speake? Q Is that the report-book?
- 21039 Q Mr. Speake? Apparently. By giving me that as the book.
- 21040 Q Now, I only gave it to you for you to see your name mentioned in it, if you could? A Yes.
- 21041 Q Are you satisfied that, in the report there, on the 19th of July, your name is not mentioned? You have looked at the 19th of July, and read it? A Yes.
- 21042 Q Are you satisfied that your name is not mentioned in the report of the 19th of July? A Yes.
- 21043 Q I would like you to tell me, if you can, when time you went into the mine with Mr. Nelson on the 19th of July? A Well, I could not tell you to a few minutes. It was in the morning, though, before breakfast, or about breakfast time.
- 21044 Q About what time, now—do you remember the occasion? A Yes, I remember it well.
- 21045 Q Tell me about what time you went to? A I think it would be about 8 or 9 o'clock.
- 21046 Q How long were you in the mine, please? A I could not say.
- 21047 Q Roughly? A Oh, well, say three hours.
- 21048 Q From about 8 or 9 o'clock till 11? A Yes.
- 21049 Q You went into the Daylight heading there? A No, we went in the travelling road—the main travelling road.
- 21050 Q Then, tell me where you went to? A We went into the 1st Right, here.
- 21051 Q You went into the No. 1 Right? A Yes.
- 21052 Q The main level? A Yes, then into the 1st Right, round the face between the 1st Right and the 2nd Right, and up the mine cut heading to the 1st Right along the rope road.
- 21053 Q And from the 1st Right where to? A I do not know how many heads we went up on the 1st Right—say as two of those heads.
- 21054 Q And then where? A And then into the headings—No. 1 heading.
- 21055 Q Well you show me any mention in the report of having been in the No. 1 heading, have a look at it—show me any mention of the No. 1 heading in the book? A
- 21056 Q Mr. Weaver? Is that a short report there of the whole day's work, do I understand?
- 21057 Q Mr. Speake? He has not mentioned the No. 1 Right.
- 21058 Q From all of it that the right day? A It is Saturday, the 19th.
- 21059 Q And that is his own handwriting—Mr. Nelson's or a handwriting? A Yes; and that is the day, too, because the working furnace is mentioned.
- 21060 Q Read it, please? A [Reading.] "19th of July, Saturday. Entered mine at 8 1/2 a.m., and worked 2nd Right level and back headings. Thence to 5th Right up-road, and to a few workings, places a 5th Right in No. 1 Right, and found some loss from inflammable gases, and a good strike. Gases to where down were put in, to keep back water from shaft and No. 1 workings and in working furnace, which was being repaired, and arranged with furnace over to light on the 20th, and some mine at 12 1/2 p.m., and left mine at home—W. Weaver."
- 21061 Q Mr. Speake? Q You see there that there is not a single mention of your having gone into either the front or back heading of No. 1? A No, there is not.
- 21062 Q And you see that Mr. Nelson does mention having gone into the headings as the 1st Right and 2nd Right? A Yes.
- 21063 Q He does not say anything about the main headings at the top of No. 1? A Yes.
- 21064 Q Well you tell me whether you went round to the furnace with Mr. Nelson? A Yes, I went to the furnace with Mr. Nelson.
- 21065 Q Is that the report which I understand that you refer to? A That is the same report that I refer to.



- 20500 Q There is no other information on his book with any report, to your knowledge? A No, I do not think so.
- 20501 Q Can you account at all for the contents of the back heading of No. 1 having been omitted from the report? A I cannot.
- 20502 Q Have you read this report since the day Mr. Ahlstrom saw it? A Never read it through.
- 20503 Q I suppose it was part of Mr. Nelson's duty to go in and inspect that back heading? A It is his duty to inspect, certainly.
- 20504 Mr. Wade Q Do you know anything about his duties? A Oh, I know some of his duties; but I have nothing to do with his duties.
- 20505 Mr. Wade If this is to be used for any material purpose it is necessary, your Honor, of course, to find out, first of all, whether he is a competent judge of Mr. Nelson's duties.
- 20506 Mr. Wade You may ask him some questions as to his competence, Mr. Wade. So far, Mr. Lyngdahl is perfectly within his rights in asking those questions as to Mr. Nelson's duties.
- 20507 Mr. Lyngdahl Q Do you remember seeing the jig wheel which was placed at the top of the heading? A I do.
- 20508 Q Which heading was it in, front or back? A The front heading.
- 20509 Q Did Mr. Nelson say anything to you about how long it was since he had been up in that back heading? A No, he never said it.
- 20510 Q Was then, do you say, his forgettingly visit there;—do you know whether he used to go up there as an average once a fortnight? A I do not know how often he used to go there.
- 20511 Q Did he say anything about having been up there the week before? A He never mentioned whether he had been up there, or had not been up there.
- 20512 Q Did not the jig wheel apparently leave all that front heading? A Practically.
- 20513 Q Practically it did? A Yes.
- 20514 Q Did you go over that jig wheel, or did you go in the back heading way? A We went just that jig wheel.
- 20515 Q In the main heading, is the front heading? A Yes.
- 20516 Q When did you get into the back heading, then? A After we had tested in the main heading, we came through the top cut through and into the back heading.
- 20517 Q And, when you came out, which way did you come out? A We came out and along the 4th level road.
- 20518 Q You see that, by doing that, you were from the 10th level right past the travelling road, up the main level, down the travelling road and were going yourselves a long journey round; you see that, do you not? A I see what you mean.
- 20519 Q Your ordinary course would have been up the travelling road from the 10th level? A Yes.
- 20520 Q But you did not go that way? A No.
- 20521 Q Can you tell me why it was that you did not follow that ordinary course? A I could not, I was just following him.
- 20522 Q Would you be supposed to know that the day before the 15th of July, Mr. Nelson had been right up the No. 1 main heading? A I would not be supposed.
- 20523 Q Would you be supposed to know that? A I would not.
- 20524 Q I suppose you well admit that, if Mr. Nelson had been up the day before, or anywhere near that jig wheel, there would have been no need to go again to test for gas? A That the foreman was being repeat.
- 20525 Q If Nelson had, the day before, or two days before, been right up at the jig wheel there would have been no need to go up there again two days afterwards? A Yes, but I need be might have gone up there because the foreman was stopped, and the ventilation was checked. There was no fire; and that is the reason, that is why we were there.
- 20526 Q Why? A Just to have a look round.
- 20527 Q Did you expect to find gas? A We went to see if we could find gas.
- 20528 Q Did you expect to find gas? A No.
- 20529 Q But you did not take any flare lights? A No.
- 20530 Q You did not take any risk? A We did not take any risk, no.
- 20531 Q Now, I am reading from Mr. Nelson's report on the 15th July: "And to where the jig was getting fixed on No. 1 main heading, and found everything all right, and came outside at 9 p.m." That is on the 15th day, the 15th of July.
- 20532 Mr. Nelson And read that again, please.
- 20533 Mr. Lyngdahl That is a continuation of the report. And to where the jig was getting fixed on No. 1 main heading, and found everything all right.
- 20534 Mr. Nelson Don you see on the Thursday, you say.
- 20535 Mr. Lyngdahl Yes, the 15th of July. Apparently he did not go past the jig wheel on that occasion, your Honor.
- 20536 Mr. Wade That is a different thing altogether from what you were asking just now.
- 20537 Mr. Lyngdahl Q As far as you know, no report had been made until Mr. Ahlstrom said it? A No, I must have got mixed up just now. Mr. Ahlstrom said it, and I was telling him about my mind. [Interposed.]
- 20538 Q As far as you know, no report had been written? A No.
- 20539 Q And since that day was not never upon this report? A No.
- 20540 Q When did you first tell that you had been up with Mr. Nelson on the 15th of July? A The Manager, The Manager and everybody. They all knew, the officials. [Interposed.]
- 20541 Q I am asking you when you first told? A I cannot say.
- 20542 Q What did you say "the Manager" for? A I have told you a few.
- 20543 Q As you remember when you first told? A I could not say.
- 20544 Q When did you tell the Manager? A If not the day, it was not far off.
- 20545 Q How long ago? A Oh, he knew, he was there. When I had come out of the mine I told him I had been up there.
- 20546 Q When? A The first time I saw him.
- 20547 Q Just after the disaster? A No, before the disaster. He would know that I was there on the Sunday.



[Scene—Mr. May, 11th Feb., 1905.]

- 21718 Q Let me clearly understand you—you say that Mr. Rogers would, on the 20th of July, know that you had been to the top of the front and back headings the day before? A Yes.
- 21719 Q Did you tell him on that day? A On the Saturday.
- 21720 Q On one time, did you tell him that about that time, before the disaster? A Yes.
- 21721 Q You distinctly remember telling him? A Yes.
- 21722 Q Where did you tell him? A I think on the Sunday morning, at the house.
- 21723 Q Will you tell me why you wanted to go and tell Mr. Rogers that you had been right up to the top of the No. 1 mine and back heading? A Yes, I generally used to tell him, when I had been to the mine like that where I had been.
- 21724 Q Is that the only reason? A I had no reason whatever to tell him.
- 21725 Q And you are that the Manager knew,—do you know whether the deputies knew, the officials? A Oh, yes, I suppose they knew.
- 21726 Q Did you ever tell them? A I do not know whom I told. I did not keep it any secret.
- 21727 Q I do not want to mislead you; but I ask you again, do you distinctly remember telling the Manager (Mr. Rogers) on the 20th that you had been to the top of the front and the back headings? A Yes.
- 21728 Q Do you know that Mr. Rogers stated at the inquest (page 60) that there was no reason for not warning the 20 or 40 yards beyond the fence at the top of No. 1 Right, except that there were no men working there [Reading from *Depositions at Inquest*]?—There were no men working there, and, therefore, there was no reason to suspect it?—did you know that he stated that? A No.
- 21729 Q Were there any men working there? A No.
- 21730 Q How long was it before you went there that was had been working there? A I could not state that.
- 21731 Q About how long? A I could not give anything like it. I think it was a fair while; I could not state it.
- 21732 Q There is it not a fact that, beyond the jig wheel the phone was fenced off and ingress practically forbidden to it? A Yes.
- 21733 Q On the 18th July? A Yes.
- 21734 Q And it had been in that condition for some time? A Yes.
- 21735 Q Can you tell me of any other place that you went through which had been fenced off on that 18th of July? A I could not remember.
- 21736 Q Can you remember going through any other place at all that had been fenced off? A We went through old workings at banks, or anywhere.
- 21737 Q Can you tell me any place that you went through, that you remember, that had been fenced off like that? A I could not.
- 21738 Q Will you tell me how it was fenced off? A Just a rail fence.
- 21739 Q A what? A Just a piece of timber fence, you know.
- 21740 Q I do not know; I have some evidence about it,—can you tell me what sort of a fence was on the front heading? A I could not describe the fence.
- 21741 Q Can you tell me the sort of a description of the fence that was on the front heading? A I could not tell you what kind, I am so many years.
- 21742 Q Have you no idea? A No.
- 21743 Q Can you give me any idea what sort of a fence there was on the back heading? A No, I could not.
- 21744 Q And do you not remember getting through it? A Oh, yes.
- 21745 Q Through the fence on the front heading and through the fence on the back heading? A Yes.
- 21746 Q Both of them? A Yes.
- 21747 Q And did you remember? A No, I cannot.
- 21748 Q Whether there was one board, or two boards, or three boards or anything else? A No.
- 21749 Q You cannot remember? A I cannot.
- 21750 Q How did you come to remember that it was on the 18th July that you were there? A Because of the furnace being repaired, that is what made me remember about the 18th of July.
- 21751 Q But do not you know that the furnace was being repaired for some days? A Some days?
- 21752 Q Yes? A The fire was not out on the Friday.
- 21753 Q Do you tell me that the furnace requiring had not started on the Friday? A Yes.
- 21754 Q Where did you get the date that the furnace was down from,—to what did you refer to fix this date? A I knew that the furnace was going to be out on the Saturday because there was no work, it was a pay Saturday.
- 21755 Q To what did you refer to fix the date as the 18th of July? A I knew that pay Saturday was the 18th.
- 21756 Q Did you include a back from any bank? A I know. It is an account of my cleared work, making up the pay due. If I could see my ticket, I dated all the pay tickets the 18th; that would be Friday, and I could easily remember the date.
- 21757 Q And that is how you do? A Yes.
- 21758 Q And I understand that you yourself, never used the safety lamp? A No, I did not.
- 21759 Q And you were for gas yourself anywhere? A No, I never used it.
- 21760 Q You simply carried the lamp? A I just watched. The under-manager tested, and it was not necessary for both to test.
- 21761 Q I take it that he tested in a lot of other places besides? A No.
- 21762 Q Is that the only place he tested for gas? A He tested, as I said before, two or three holes in the 5th Right—I could not say how many—these holes in the air, next to the heading, and then he tested the front and back headings.
- 21763 Q Were Morris and you working near this back heading at this time, the 18th of July? A No, they were not working there; no one was in the mine.
- 21764 Q Was that their working place? A No.
- 21765 Q Where was Morris and you's working place? A It had not started—you it had—it had just started, I think.
- 21766 Q Do you know where Morris and you were working at the time of the disaster? A Yes, in that cut-through there [pointing out the position on the plan].



21762. Q I want to know—had that cut-through been started on from the back heading at the time of the inspection (by Mr. Nelson and witness)? A No, that had not started.
21763. Q What did you tell me it had for? A I did not tell you it had.
21764. Q Did not you say Morris' place had just started when you were up there? A I do not remember saying that.
21765. Q Will you swear you did not?
21766. Mr. Johnston: I understood him to say that it had just started.
21767. Mr. Lynght: Q You are the man who was supposed to be there? A Yes, I was there.
21768. Q I want to know had Morris' place started? A Well, I do not think it had started.
21769. Mr. Johnston: Q When was this? A On the 11th.
21770. Mr. Lynght: Q You say you do not think it had started? A I am not so clear about it.
21771. Q Did you go into it? A No, I did not. I am not so clear about this.
21772. Q Now, you can remember the very exact spot back, coming down the back heading to go over to the 4th L&N, and you cannot remember whether that place had started? A No, I cannot remember exactly.
21773. Q Then you can tell me how the modification was carried out that cut-through which Morris afterwards worked? A By the bridge.
21774. Q Can you tell me how the bridge ran? A [Witness explained it on the plan to Mr. Lynght.]
21775. Q Then I understood from you now that the cut-through between the front and back headings, being the continuation of what was afterwards Morris' place, had stoppage in? A Yes, bridge.
21776. Q Then how many cut-throughs would be there, above Morris' place or what would be Morris' place, with bridge stoppage? A All but the last one.
21777. Q Now many would that be? A I could not tell you.
21778. Q Cannot you remember the number of cut-throughs that would be above Morris' place up to the top of the heading? A No.
21779. Q Now, you cannot tell me the kind of fence, you do not know whether Morris' place had started, and you cannot tell me how many cut-throughs? A I was not taking notice of fence or cut-throughs.
21780. Q There may have been three or four? A You could tell by the distance, you know.
21781. Q Cannot you remember going through cut-throughs? A Yes.
21782. Q Cannot you remember how many cut-throughs you went into above where Morris' place would be? A Yes, I can remember going into one—the top one.
21783. Q Is that the only one? A No.
21784. Q Would you go into all the cut-throughs that were there? A No.
21785. Q Can you tell me how many you did not go into above Morris' place? A No.
21786. Q Now can you tell me how many cut-throughs there were above what was afterwards Morris' place? A No, I cannot. I do not remember.
21787. Q Do I understand from you now that the survey went straight up the back heading to the last cut-through?
21788. Mr. Webb: The witness has never said that at all.
21789. Mr. Lynght: Q Just tell me where the survey did go, from what would be Morris' place afterwards where did the survey go? I ask you not to look at the map, tell me from your recollection, where did the survey go from that place which would be afterwards Morris' place? A I do not understand you.
21790. Q Did not you tell me the air was carried up with bridges? A Up to the back heading, yes.
21791. Q I want to ask you where was that bridge? A It was there.
21792. Q Where? A Carrying the air out to the back heading.
21793. Q Do not look at the map. I ask you to tell me from your memory? A It was from the top cut-through, the first [According to work the survey as the work to Mr. Lynght]; it used to come up the back heading, and up to the flow of the back heading, and down back again.
21794. Q So that, when you would be coming down the travelling road, you would be coming against the intake air? A Coming down the travelling road?
21795. Q That is the question. Is not that so?
21796. Mr. Johnston: Had not you better say what travelling road you refer to?
21797. Mr. Lynght: I am speaking of the back heading.
21798. Mr. Johnston: In point of fact that particular place in which, I think, you refer would not be designated the travelling road.
21799. Mr. Lynght: It is the back heading then.
21800. Q I want to know, as you were coming down there, from the face, were you coming against the intake air or travelling with the air? A Coming from the face to the back heading.
21801. Q You say you came from the front heading into the back and down the back heading. I want to know, were you travelling against the air coming down the back heading? A Yes, the air was coming up.
21802. Q Where was it you started to go into it in front heading?
21803. Mr. Webb: I skip it to this. The statement is the very opposite. It is only done for the purpose of catching the witness. His evidence all through has been that he went up the front heading first, and then down the back heading. Mr. Lynght takes it as if the man and the opposite.
21804. Mr. Lynght: Q I am asking it as you said. I asked you whether you did not go up the front heading, and go down the back heading. At what point did you go from the back heading into the front? A I remembered in my mind I went up the front heading, and came across the top cut-through into the back heading, and back again across the cut-through and down the same road.
21805. Mr. Webb: Q Do you mean the same cut-through? A Yes.
21806. Mr. Lynght: Q Well, then, you say that you came in from the front to the back heading by the top cut-through and went from the back heading into the front heading by the same cut-through? A Yes.
- [Mr. W. B. Pratt attempted to take short-hand notes of the evidence and proceedings.]
21807. Mr. Lynght: Q Now, how far did you go down the back heading? A I came down the top cut-through, and back through the same cut-through.
21808. Q You mean down from the face? A Yes.



21511. Q. Is it also from your statement that at no time on that day were you in any part of the back heading between the 5th Right and the last cut-through? A. I was up at the face.
21512. Q. At no time on the 29th were ever you or Nelson at any place between the 5th Right and the last cut-through in the back heading? A. No, I do not think I was.
21513. Q. When you were in the back heading, you would not be travelling against any incoming air at all? [No answer.]
21514. Q. You arrive some down the back heading past the last cut-through? A. No.
21515. Q. You are went through the last cut-through to the last heading? A. It had led up to the face and up to the last cut-through.
21516. Q. Do you tell me that, from the last cut-through up to the face, which is not being worked, there was heavier right up to that face? A. Yes, the heaviest there was there.
21517. Q. Can you tell me how many months that place had been standing there unworked? A. No, I could not. I could not say how many months it was that the back heading had been stopped.
21518. Q. Now, if that back heading was broken from the last cut-through right up to the face, you would not be working the air in at all when you come down? A. I take it that the place was ventilated.
21519. Q. Do you not see that you did not, on that occasion, come round the bridle, and go down the back heading? A. We would not do that.
21520. Q. You would not do that, it is clear. How far from the face was the bridle clock, actually? A. I could not say exactly how far it would be from the face.
21521. Q. Can you give me any estimate? A. Oh, say half a dozen yards or more.
21522. Q. No yards? I could not exactly say, I will not say it to any distance.
21523. Q. Can you tell me how far it was from the last cut-through to the face? A. No.
21524. Q. Could you give me any idea of the distance from the last cut-through up to the face? A. It would be indicated.
21525. Q. What do you estimate it at? A. Twenty yards, perhaps more.
21526. Q. There would be about 16 yards of bridle cloth towards the face? A. Yes.
21527. Q. And at no time did you go round the bridle cloth round the back heading? A. No.
21528. Q. Do you not see that you would not be getting the intake air at all? [No answer.]
21529. Mr. Hay: That is not in accordance with the question put to the witness. The question was, "Supposing you came down, you would be going against the air in the heading?" Now, Mr. Lynght is taking it as a fact.
21530. Mr. Hay: The witness did not say "I came against the intake air in coming down from the face of the back heading, towards the 5th Right," but he said, "If I came down I would go against the air."
21531. Mr. Lynght: Q. You went up the front heading, and I understood that you did not branch into the back heading until you got to the last cut-through in the face? A. Yes.
21532. Q. Do you remember passing through any canvas doors? A. No.
21533. Q. Do you know whether there were any canvas doors in that cut-through going to the left of the waiting place? A. I have not got the yet in my head.
21534. Q. I am only speaking of the place which you afterwards knew as Margal working place. Do you remember whether in the front heading you went through any doors? A. I cannot remember going through any canvas doors.
21535. Q. After you got on the 5th Right did you open any canvas doors? A. You would have to open canvas doors.
21536. Q. Did you? A. Yes.
21537. Q. You remember opening them? A. I do not remember canvas doors. I remember being there.
21538. Q. I ask you if you can remember opening some canvas doors? A. I cannot remember, I suppose I did open a canvas door to get through.
21539. Q. Do you know a door was there? A. It would have to be there.
21540. Q. Do you know it would be there? Yes.
21541. Q. You might tell me this. That is the highest part of the mine? A. Yes.
21542. Q. Was that a pretty dusty place before the explosion? A. No, you would not call that a dusty place.
21543. Q. What would you call a dusty place? A. I should call a place dusty when there was dry dust on the roof and on the floor.
21544. Q. How much dust? A. Oh, if the dust is plainly seen and it is dry dust, I would call it dusty.
21545. Q. How much when? A. I would not say anything as to how deep. If the dust is plainly to be seen on the roof and on the floor I should call it dusty.
21546. Q. Which was the dusty part in your opinion? A. The bottom of the 5th Right.
21547. Q. And the next dusty place? A. Oh, I do not remember the different places, there were patches dusty.
21548. Q. There were patches dusty—where were they? A. You would find dusty patches in different parts of the mine.
21549. Q. Can you tell me, referring to this large waste, whether the openings in it had any stoppings? A. I cannot tell you, I suppose they had.
21550. Q. I do not want suggestion—can you tell me? A. I did not examine them.
21551. Q. Can you tell me? A. No.
21552. Q. I think it is a fact that, at the junction of the 4th Left with No. 1 main level, there were single canvas doors. You can look at this plan [Exhibit No. 25] if you like. You see the 4th Left goes west and the 4th Left travelling road, at the junction with No. 1 main level—can you say whether there were single doors there? A. There were canvas doors there.
21553. Mr. Hay: That is all the evidence bearing to anything?
21554. Mr. Hay: I am where it is pointing to.
21555. Mr. Brown: That. What is it going to lead to?
21556. Mr. Lynght: Q. You are clear there were single canvas doors there? A. There were a lot of canvas doors there.
21557. Q. At the first junction of the 4th Left travelling road and the 4th Left rope road—can you clear where they being there? A. Between the main heading and the 4th Left.
21558. Q. Are you clear there were single canvas doors there? A. I know there were doors there. I could not say whether they were single doors or not.



- 21329 Mr. Nichols [There is a discrepancy between the plans. There are double doors on one plan, and single doors on the other.]
- 21330 Mr. Lough [Yes, I know that. That was the object of my question.]
- 21331 Q I want to ask you now about the 4th Right, which you say went into. How long was that before the disaster that you went into the 4th Right pillar? A. I could not state the date.
- 21332 Q Roughly? A. I would not say.
- 21333 Q Some months before the disaster? A. Take it at that if you like.
- 21334 Q It is not what I like. It was with Mr. Leitch? A. Yes.
- 21335 Q Were you there with anybody besides Mr. Leitch? A. I suppose I might be.
- 21336 Q Do you not remember? A. No.
- 21337 Q Do you not know that Mr. Leitch left the colliery some months before the disaster? A. No.
- 21338 Q How long before the disaster did he leave? A. I do not know—it was not many months—two or three at least.
- 21339 Mr. Woods [Noble.]
- 21340 Mr. Nichols [Does not fair, Mr. Lough, to tell the witness in your question as if you knew the fact when you did not know it.]
- 21341 Mr. Lough [Q Now, can you remember being in the 4th Right pillar with anyone except Mr. Leitch? A. No.]
- 21342 Q When you went in the pillars were being worked? A. Yes.
- 21343 Q I think it is a fact that the shift-men had to timber up the roof so that the men could work the pillars? A. Yes.
- 21344 Q The roof behind the waste, had fallen very badly? A. Yes, very badly.
- 21345 Q Very weightily? A. Yes.
- 21346 Mr. Roberts [Do you not think it would be better that you should ask the condition of the roof?]
- 21347 Mr. Lough [I put the questions to the witness so that he cannot see what is the nature of the answer implied.]
- 21348 Mr. Woods [Sometimes you put a question that might lead the witness to answer the question in a different way from that to which he ought to answer it.]
- 21349 Mr. Lough [Q Do I understand that, all round the pillars of the 4th Right, the roof had fallen weightily? A. Yes.]
- 21350 Q And they had fallen on the occasion of this visit of yours with Mr. Leitch? A. Yes.
- 21351 Q Now, will you tell me about what area of pillars were remaining to be taken out when you were there with Mr. Leitch? A. I could not tell you.
- 21352 Q Roughly? A. I have no plan.
- 21353 Q Can you think at all? A. No, I have a poor memory.
- 21354 Q You have a poor memory? A. Yes.
- 21355 Q Can you tell me whether there were 30, 35, 40 or 50 pillars remaining? [No answer.]
- 21356 Q Mr. Roberts [Mr. May is not an ordinary underground official and he cannot be expected to have the same knowledge as an underground engineer.]
- 21357 Mr. Lough [Mr. Woods puts the witness forward to speak authoritatively as to the condition of a portion of the mine, and I want to show that he does not know anything about it.]
- 21358 Mr. Woods [We have evidence that Mr. Leitch and Mr. May were were going out of the mine. That is why I called him.]
- 21359 Mr. Roberts [The witness might remember a particular part of the mine, certainly.]
- 21360 Mr. Woods [I understand that he was clear and weighty, and that he went into the mine conversely with Mr. Leitch.]
- 21361 Mr. Lough [Q I am, in answer to a question of mine, that the witness and that he went in the 4th Right pillar once a month with Mr. Leitch? A. That was to take the notes for the gas-man-ger.]
- 21362 Q Would he measure the pillars? A. Yes.
- 21363 Q On the last occasion when you were with Mr. Leitch, cannot you tell me how many pillars there were to be worked out? A. No.
- 21364 Q Can you give me no idea? A. No.
- 21365 Q When do you mean by saying there were no pillars left? A. I have seen three British pillars, they have got the roof all right.
- 21366 Q There must have been a dozen pillars left? A. As far as I know, there might be.
- 21367 Q Do you not know that the shift-men had to go on the 4th Right and keep up the roof for them to take down the pillars? A. The shift-men have to open all sorts of places.
- 21368 Q Did the shift-men have to go in and keep up the roof? A. I knew the shift-men were in there putting timber up.
- 21369 Q How long before the disaster? A. I could not say.
- 21370 Q Do you not know that they were taking pillars out of a place 20 yards from where the gas took? A. I do not understand you.
- 21371 Q I want to find out the area of the pillars that was worked out in the surrounding gas, and I want to know what pillars were left. What area would be left when the pillars were extracted? A. I could not say.
- 21372 Q Can you give me no idea? A. No.
- 21373 Q Is it not a fact that you only went some 15 or 20 yards into the 4th Right with Mr. Leitch?]
- 21374 Mr. Woods [When?]
- 21375 Mr. Lough [Q On the day he speaks of? A. I do not remember how far I went.]
- 21376 Q You said I was measuring some a fortnight with Mr. Leitch and Mr. Nelson? What were you measuring with Mr. Leitch and Mr. Nelson for? A. When he was measuring the place.
- 21377 Q Then you did make it a custom to go and measure the place? A. Yes.
- 21378 Q Where was he in the 4th Right? A. Yes.
- 21379 Q With Nelson? A. No, I cannot say with him.
- 21380 Q With Leitch? A. Yes.
- 21381 Q How long before the disaster were you measuring with Leitch in the 4th Right? A. I can give you no idea.



- 21212 Q. You were in the aisle after the disaster. Did you notice any smoke burst at the top of the back heading? A. I saw no indication of fire until after the disaster.
- 21213 Q. Did you notice the burst? A. It seemed to be burst.
- 21214 Q. Did you not know whether it was burst? A. I could not get certain, and you would not know whether it was burst or not.
- 21215 Q. Never mind me. Do you know about this smoke being burst? A. People got doubtful about smoke being burst. There was heat there.
- 21217 Q. Did you say doubt about its being burst? A. It was burst.
- 21218 Q. Have you any doubt that a number of men were burnt? A. I never examined them.
- 21219 Q. Did you see Farrell and Abbott—was Farrell burnt? A. I did not examine him. I only saw him outside.
- 21220 Q. Do you know whether he was burnt? A. Yes.
- 21221 Mr. Justice: Q. Which one? A. Tom Farrell.
- 21222 Mr. Justice: Q. Do you know where he was found? A. Somewhere in the back travelling road in the 2nd Right.
- 21223 Q. Do you know of anyone else besides Farrell who was burnt? A. Not from my own personal knowledge, only from hearing people speak.
- 21224 Q. Can you give me any idea as to the direction in which the flames travelled? A. Yes.
- 21225 Q. In what direction? A. It flamed right and left from the 2nd Right.
- 21226 Q. The flames were travelling right and left from the 2nd Right? A. I do not say flame.
- 21227 Q. Can you tell me the direction in which the flames were travelling? A. No, not the flame.
- 21228 Q. Have you any doubt that flames were travelling? A. Something travelled.
- 21229 Q. Have you any doubt that flames travelled at that disaster? A. There must have been heat to cause it.
- 21230 Q. I am talking about flame? A. I was not there to see, but there must have been flame if there was burning.
- 21231 Q. Have you any doubt at all? A. No, I have not.
- 21232 Q. Now, perhaps, having told me there was flame, you will tell me what, in your opinion, caused the disaster? A. I have a doubt about it.
- 21233 Mr. Wade: This evidence is not put forward by me as an expert at all. If his opinion is of any use to the Commission, I have no objection to it.
- 21234 Mr. Justice: He saw certain signs of force, but his opinion may be of little value. He is asked now if he can form any opinion at all.
- 21235 Mr. Wade: He is not put forward as an expert.
- 21236 Mr. Justice: He is, in a certain extent, something like an expert.
- 21237 Mr. Justice: Q. You said you were a member of indications of burning throughout the mine? Q. Yes.
- 21238 Q. Can you tell us where, and direct like that? A. Yes, indeed.
- 21239 Q. I will not go into details, but, having seen what you did, what, in your opinion, caused the disaster? A. I do not know.
- 21240 Q. Have you not thought? A. I have thought a lot but come to no conclusion.
- 21241 Q. Have you any doubt that fire-damp played a part in the disaster? A. I do not know whether fire-damp played any part in that disaster.
- 21242 Q. Have you any doubt? A. I have a doubt because I never saw fire-damp.
- 21243 Q. Do you know that a number of men died from carbon-monoxide poisoning? A. Yes.
- 21244 Q. Can you give me any idea where that carbon-monoxide gas came from? A. It came from incomplete combustion.
- 21245 Q. OK what? A. Coal dust, or anything that caused the explosion.
- 21246 Q. What do you think? A. Coal dust, I consider, was a element.
- 21247 Q. Do you have a theory? A. I have been thinking a little over the matter.
- 21248 Q. Do you say that coal dust was an element? A. Yes.
- 21249 Q. In your opinion, was that coal dust ignited? A. I cannot say.
- 21250 Q. Have you got an opinion? A. No.
- 21251 Q. Do you say you do not know whether fire-damp played a part in it? A. I do not know. It is strange to me found it.
- 21252 Q. How long have you been at Kenilworth? A. Fourteen years.
- 21253 Q. Do you know that a man named Gallagher was burnt? A. I know he was burnt.
- 21254 Q. With fire-damp? A. Yes, he must have been.
- 21255 Q. You told me you never knew about it? A. I did not know about it.
- 21256 Q. Do you know that Randolph gave evidence of fire-damp—that it was given off in small quantities the time? A. No.
- 21257 Q. Would it surprise you to know that, five or six years ago, Mr. Randolph gave evidence that fire-damp in small quantities was found in the mine? A. It is rather surprising to me.
- 21258 Q. If you have never seen fire-damp, why did you want to take the safety lamp with you when Mr. Nelson had one, and you did so concerning? A. I did not want to examine where he was concerning.
- 21259 Q. You said you did not examine at all? A. I said that.
- 21260 Q. Why did you take a safety-lamp? A. I intended to examine, but, seeing how careless, I did not bother.

He continued by Mr. Wade—

- 21261 Q. You said "Yes," in answer to a question which included these words, "That indications of burning were found throughout the mine." Tell us exactly in what spots you saw indications of burning? A. In the top road-through, and between No. 1 front and back headings. There was a lot of noise there.
- 21262 Q. Anywhere else? A. On the 2nd Right in the back heading.
- 21263 Q. Whereabouts? A. It was on the left side of the cut-through.
- 21264 Q. How far was it? On the last cut-through—from there up in the face—between that and the face? A. Yes.
- 21265 Q. Anywhere else? A. Towards the small goaf—the 17-purdon goaf—there were indications of cold dust.



- 21957 Q Where do you mean? A On the 4th Light.  
 21958 Q Where Africa was working? A Yes.  
 21959 Q Anywhere else? A I do not think I could say anywhere else. Those are the only places I know of.  
 21974 Q Let us understand about the measuring. Was it part of your regular duty, or not, to go in with the under-manager? A I was going in with the under-manager for experience.  
 21975 Q For your own experience? A Yes. I used to go into the mine whenever I had an opportunity in order to get experience.  
 21976 Q Mr. Atkinson? A I suppose you were acting officially? You were not going in except on official duty? A Not to measure.  
 21977 Q You would go in officially when measuring? A Yes.

Resumée by Mr. Bruce Smith—

- 21978 Q Do you know of two stoppages where at No. 2 Light? A Yes.  
 21979 Q You were in that direction since the disaster? A Yes.  
 21980 Q Can you remember which way they were blown out? A I remember there were some of the stones on the main heading—they or not inside the main heading.  
 21981 Q Where were the stones? A They seemed to be both ways.  
 21982 Q Do you mean to say, from the stones you saw, there were indications of blows both ways? A Yes, a sort of round.  
 21983 Q As much one way as the other? A I could not say.  
 21984 Q Which way did the force preponderate? A From the main heading. From the back heading the force seemed to have come back and knocked out the stones too. It seemed to rebound from the rib side.  
 21985 Q Mr. Atkinson? Q That stopping which Mr. Bruce Smith referred to—was it not both of large stones? A There was no need for a stopping.  
 21986 Q Was it not faced with large stones in front, and back of up with small coal? A There was coal at the back, and large round stones in the front.  
 21987 Q If the explosion caused the stones to topple over, the coal would run down? A On top of the stones.  
 21988 Q If it were faced with large stones, and if the explosion struck it, it may have tumbled over into the main heading? A Yes.  
 21989 Q And the small loose stuff behind would run down in front? A Yes, and across the stones.  
 21990 Q And give the appearance of its having been drawn in from the back heading? A It may have done so.

JAMES BARR was sworn, and examined as before—

Examination directed by Mr. Wade—

- 22001 Q What is your name? A James Barr.  
 22002 Q You are Manager of the Co-operative Colliery, Newcastle District? A Yes.  
 22003 Q Have many years experience here, you had? A Forty-two.  
 22004 Q Leaving Kemsle out of the question, have you had any practical experience of explosions in collieries? A Yes.  
 22005 Q Where has that been—what have you seen? A Well, in Scotland I was slightly burnt by an explosion of fire-damp.  
 22006 Q Was that an explosion? A It was an ignition. It probably went 50 or 60 yards.  
 22007 Q Have you had any experience anywhere else? A I have had an experience in the Newcastle District—at the Westbranch Colliery—was the explosion.  
 22008 Q What was that? A A slight explosion.  
 22009 Q Over what area did it go? A The explosion carried nearly 200 yards.  
 22010 Q Were there any indications left at distance of force? A Yes, coal.  
 22011 Q Where? A On the main, the timber, the pit bottom, and the ribs.  
 22012 Q Have you had experience anywhere else? A Yes, at Dudley.  
 22013 Q Were you in the big explosion there four or five years ago? A Yes.  
 22014 Q Did you see indications of force there? A Everywhere, right throughout the mine—everywhere from the pit bottom to the face.  
 22015 Q You saw what? A Indications of force, round dirt, and timber burst and shivered.  
 22016 Q You were in Mount Kemsle after the disaster? A Yes.  
 22017 Q When did you go? A I got there on the Saturday afternoon.  
 22018 Q On the 2nd of August? A Yes.  
 22019 Q I am not going through all the details—but did you go through the whole of No. 1 Light? A I do not know that I went through every part, but I went through the major portion of it.  
 22020 Q Do you know the 4th Light? A Yes.  
 22021 Q Where do you see No. 1 main road? A Yes.  
 22022 Q Did you travel in ships and tubs? A I went up ship, went out ship and I went tubs, I went into the main road, and came round out of it. I went in by different ways.  
 22023 Q Where do you say the blow divided? A It divided at a point in the main road, a portion going towards and a portion towards. It divided itself on the main road.  
 22024 Q Did you see ships and coal, and rubble, and various things blown about? A Yes.  
 22025 Q Did you see any signs of sinking at least on any of these ships? A No, I did not.  
 22026 Q Did you see any resemblance between the condition of things at Kemsle and what you saw at Dudley? A None whatever—not so far as these were concerned.  
 22027 Q Do you remember whether you saw coal on the outside side of the Light, either in ships or on the floor? A There was some about the drawing point—there was a heap of coal there, and some dust.  
 22028 Q What do you mean by the drawing point—you say, "show the drawing point"? A Show me the place. [Witness looked at the plan—Collier No. 20—and pointed to the outside side of the 4th Light.]



pleases—*Mr. Roy, 8 March 1933.*

- 21912 Q You were in the mine after the disaster. Did you catch any smoke barrel at the top of the back heading? A I saw no evidence in the case.
- 21913 Q Did you notice the barrel? A It seemed to be burnt.
- 21914 Q Did you not know whether it was burnt? A I could get extra, and you would not know whether it was burnt or not.
- 21915 Q Never mind me. Do you know about the extra being burnt? A People get deceived about things being burnt. There was both flame.
- 21917 Q Had you any doubt about its being burnt? A It was burnt.
- 21918 Q Have you any doubt that a number of men were burnt? A I never examined them.
- 21919 Q Did you see Purcell and Blount—were Purcell burnt? A I did not examine him, I only saw him outside.
- 21920 Q Do you know whether he was burnt? A Yes.
- 21921 Mr. *Wade* Q Which one? A Tom Purcell.
- 21922 Mr. *Wade* Q Do you know where he was found? A Somewhere in the back travelling road in the End Road.
- 21923 Q Do you know of anyone else besides Purcell who was burnt? A Not from my own personal knowledge, only from hearing people speak.
- 21924 Q Can you give me any idea as to the direction in which the flame travelled? A Yes.
- 21925 Q In what direction? A It turned right and left from the 4th Right.
- 21926 Q The flame was travelling right and left from the 4th Right? A I do not say flame.
- 21927 Q Can you tell me the direction in which the flame was travelling? A No, not the flame.
- 21928 Q Have you any doubt that flame was travelling? A Something travelled.
- 21929 Q Have you any doubt that flame travelled at that disaster? A There must have been heat to cause it.
- 21930 Q I am talking about flame? A I was not there to say; but there must have been flame if there was burning.
- 21931 Q Have you any doubt at all? A No, I have not.
- 21932 Q Now, perhaps, being told me there was flame, you will tell me what, in your opinion, caused the disaster? A I have a doubt about it.
- 21933 Mr. *Wade* Q This witness is not put forward by me as an expert at all. If his opinion is of any use to the Commission, I have no objection to it.
- 21934 Mr. *Wade* Q He has certain signs of flame, but his answer may be of little value. He is asked now if he can form any opinion at all.
- 21935 Mr. *Wade* Q He is not put forward as an expert.
- 21936 Mr. *Wade* Q He is a certain sort of, something like an expert.
- 21937 Mr. *Wade* Q You did see a number of indications of burning throughout the mine? Q Yes.
- 21938 Q Coloured dust on people and things like that? A Yes, colored dust.
- 21939 Q I will not go into details, but, having seen what you did, what, in your opinion, caused the disaster? A I do not know.
- 21940 Q Have you not thought? A I have thought a bit but come to no conclusion.
- 21941 Q Have you any doubt that fire-damp played a part in the disaster? A I do not know whether fire-damp played any part in that disaster.
- 21942 Q Have you any doubt? A I have a doubt because I never saw fire-damp.
- 21943 Q Do you know that a number of men died from carbon-monoxide poisoning? A Yes.
- 21944 Q Can you give me any idea where that carbon-monoxide gas came from? A It came from incomplete combustion.
- 21945 Q Of what? A Coal-dust, or anything that caused the explosion.
- 21946 Q What do you think? A Coal-dust, I suppose, was an element.
- 21947 Q So you have a theory? A I have been thinking a little over the matter.
- 21948 Q Do you say that coal-dust was an element? A Yes.
- 21949 Q In your opinion, was that coal-dust ignited? A I cannot say.
- 21950 Q Have you any opinion? A No.
- 21951 Q Do you say you do not know whether fire-damp played a part in it? A I do not know. It is strange as it is found in.
- 21952 Q How long have you been at Kaituma? A Fourteen years.
- 21953 Q Do you know that a man named Gallagher was burnt? A, I know he was burnt.
- 21954 Q Was Gallagher? A Yes he must have been.
- 21955 Q Yes, but as you never knew about it? A I said I never saw it.
- 21956 Q Do you know that Hamilton gave evidence of fire-damp—that it was given off in small quantities in the mine? A No.
- 21957 Q Would it surprise you to know that, five or six years ago, Mr. Hamilton gave evidence that fire-damp in small quantities was found in the mine? A It is rather surprising to me.
- 21958 Q If you have never seen fire-damp, why did you take the safety-lamp with you when Mr. Nelson had one, and you did no examining? A I did not want to examine when he was examining.
- 21959 Q You said you did not examine at all? A I said that.
- 21960 Q Why did you take a safety-lamp? A I intended to examine, but, seeing him examine, I did not bother.

He examined by Mr. Wade—

- 21961 Q You said "Yes," in answer to a question which included these words, "That indication of burning was found throughout the mine. Tell me exactly in what spots you saw indications of burning? A In the top cut-through, and between No. 1 haul and back headings. There was a lot of color there.
- 21962 Q Anywhere else? A On the surface in the back heading.
- 21963 Q Where there? A It was on the left side in the cut-through.
- 21964 Q How far was it? On the back cut-through—from there up to the face—between that and the face? A Yes.
- 21965 Q Anywhere else? A Towards the small post-hole the 15-pole hole—there were indications of colored dust.

21966.



21907. Q. Where do you mean? A. On the 4th Left.  
 21908. Q. Where Arden was working? A. Yes.  
 21909. Q. Anywhere else? A. I do not think I could say anywhere else. Those are the only places I know of.  
 21910. Q. Let us understand about the measuring. Was it part of your regular duty, or not, to go in with the order manager? A. I was going in with the order manager for repairs.  
 21911. Q. For your own experience? A. Yes. I used to go into the mine whenever I had an opportunity in order to get experience.  
 21912. Q. Mr. Zerkle? A. I suppose you were acting officially? You were not going in except on official duty? A. Not to measure.  
 21913. Q. You would go in officially when measuring? A. Yes.

Examined by Mr. Bruce Smith.—

21914. Q. Do you know of two stoppage holes of No. 5-Right? A. Yes.  
 21915. Q. You went in that direction after the disaster? A. Yes.  
 21916. Q. Can you remember which way they were blown out? A. I remember there were some of the stones on the main heading—they came towards the main heading.  
 21917. Q. Where were the others? A. They seemed to be both ways.  
 21918. Q. Do you mean to say, from the force you saw, there were indications of force both ways? A. Yes, a sort of mood.  
 21919. Q. As much one way as the other? A. I could not say.  
 21920. Q. Which way did the force preponderate? A. From the main heading. From the back heading the force seemed to have come back and inserted up the stones too. It seemed a rebound from the rib side.  
 21921. Q. Mr. Robinson? Q. That stopping which Mr. Bruce Smith referred to—was it not bulk of large stones? A. There was no need for a stopping.  
 21922. Q. Was it not filled with large stones in front, and backed up with small coal? A. There were coal at the back, and fair sized stones in the front.  
 21923. Q. If the explosion caused the stones to topple over, the coal would run down? A. On top of the stones.  
 21924. Q. If it were faced with large stones, and if the explosion struck it, it may have tumbled over into the main heading? A. Yes.  
 21925. Q. And the small loose stuff behind would run down in front? A. Yes, and cover the stones.  
 21926. Q. And give the appearance of its having been driven in from the back heading? A. It may have done so.

JAMES HARR was sworn, and examined as witness.—

Examination—in chief by Mr. Wade.—

21927. Q. What is your name? A. James Harr.  
 21928. Q. You are Manager of the Consolidated Colliery, Newcastle District? A. Yes.  
 21929. Q. How many years experience have you had? A. Forty-two.  
 21930. Q. Leaving Kembla out of the question, have you had any practical experience of explosions in collieries? A. Yes.  
 21931. Q. Where has that been—what have you seen? A. Well, in Scotland I was slightly hurt by an explosion of fire-damp.  
 21932. Q. Was that an explosion? A. It was an ignition. It probably went 50 or 60 yards.  
 21933. Q. Have you had any experience anywhere else? A. I have had an experience in the Newcastle District—at the Mereworth Colliery—near the Boshies.  
 21934. Q. What was that? A. A slight explosion.  
 21935. Q. Does that mean did it go? A. The explosion carried nearly 200 yards.  
 21936. Q. Were there any indications left at Boshies of force? A. Yes, coal.  
 21937. Q. Where? A. On the floor, the timbers, the pit bottom, and the sides.  
 21938. Q. Have you had experience anywhere else? A. Yes, at Dudley.  
 21939. Q. Were you in the big explosion there four or five years ago? A. Yes.  
 21940. Q. Did you see indications of flame there? A. Everywhere, right throughout the mine—everywhere from the pit bottom to the face.  
 21941. Q. You saw what? A. Indications of flame, solid dust, and timber burst and charred.  
 21942. Q. You were in Mereworth Kembla after the disaster? A. Yes.  
 21943. Q. When did you go? A. I got there on the Saturday afternoon.  
 21944. Q. On the 2nd of August? A. Yes.  
 21945. Q. I am not going through all the details—but did you go through the whole of No. 1-Right? A. I do not know that I went through every part, but I went through the major portion of it.  
 21946. Q. Do you know the 4th Right? A. Yes.  
 21947. Q. Where is yours No. 1 main road? A. Yes.  
 21948. Q. Did you travel in it—up and out? A. I went up it—I went out—up and I went in—up. I went into the main road, and came round out of it. I went in by different ways.  
 21949. Q. Where do you say the force divided? A. It divided at a point in the main road, a portion going towards and a portion outside. It divided itself on the main road.  
 21950. Q. Did you see slaps and coal, and rollers, and various things blown about? A. Yes.  
 21951. Q. Did you see any signs of rolling or burst on any of these slaps? A. No, I did not.  
 21952. Q. Did you see any resemblance between the condition of slaps at Kembla and what you saw at Dudley? A. None whatever—not so far as flame was concerned.  
 21953. Q. Do you remember whether you saw coal on the outbye side of the Right, either in slaps or on the floor? A. There was none about the driving point—there was a heap of coal there, and some dust.  
 21954. Q. What do you mean by the driving point—you say, "about the driving point"? A. Show me the place. [Witness looked at the plan—Exhibit No. 20—and pointed to the outbye side of the 4th Left.]



Witness—J. Day, 2 March, 1911.

- 22015 Q If it had been a case of gas explosion at the junction of the 4th Right, and if it had been helped by coal-dust — [Interposed.]
- 22016 Mr. Dinkler Q I mean so, I suppose the witness had a memory about that heap of coal without so being started on the spot? A Yes.
- 22017 Q I did not see it; but I see that the letters are upside down.
- 22018 Q At what particular place do you locate it? A The coal I saw there was in a heap.
- 22019 Q How do you locate the spot? A By the distance from No. 4 Right.
- 22020 Q If there was a gas explosion at the junction of the 4th Right and the main road, would you expect to find any indications of flames—say at that heap of coal or the outcrop side? A Certainly. I expect to find any indications there, there would be indications of coal.
- 22021 Q There is no doubt about that.
- 22022 Q Would you expect to find it far out, besides was that heap of coal? A Yes.
- 22023 Q Would you expect to find it on the right side? A Yes. It expanded in that way, and whenever the gas expanded and flames travelled there would certainly be coal. There can be no doubt about that.
- 22024 Q If the gas explosion was helped by dust, would you expect to find signs after an explosion like that? A There would be signs—there is no doubt about that.
- 22025 Q Have you had experience of the effects of falls? A Yes, I have.
- 22026 Q Is your own colliery? A Yes.
- 22027 Q When was that recently? A Not recently. We have felt occasionally, but not of any magnitude at all. I am speaking of from two and a half to three years ago, when we had falls.
- 22028 Q Can you give us any evidence of the extent at which the effects of these falls were felt? A Yes.
- 22029 Mr. Dinkler Q Can you give us the area of the fall? A Yes. We had one fall two years and six months ago. The lights were blown out a quarter of a mile away, and the tops of the ships—[mean the coal-pockets] on the tops of the ships—was blown away.
- 22030 Mr. Dinkler Q Do you know how much coal fell—about what area? A I suppose nearly two pillars—each area 30 yards long by 30 yards broad, and over a third of that space was filled with refuse and small coal.
- 22031 Q What do you mean? A An area 30 yards x 30 yards; and the small coal, and the refuse from the workings, would take up about a third of it.
- 22032 Mr. Dinkler Q Do you mean that each pillar was 30 x 30; or do you mean the two together? A I was taking the two together.
- 22033 Mr. Dinkler Q How high was the spot? A Six feet, but a third of that would have to come off.
- 22034 Q Were there any openings? A Yes; it was open all round about it. A wheeler was driving a horse, and he was hurled into the ship by the blast. In another case a man was taking empty tubs and when the fall commenced, and he was hurled 30 yards past them; and all the timber on the road was blown out a distance of 30 yards. The small coal was crushed into his back, or battered into it—whatever term you may like to use—and he was bleeding freely.
- 22035 Q What kind of ore was operating at? A Coal about the size of a marble.
- 22036 Mr. Dinkler Q Were there small coal scattered into the boy's skin through his shoes? A That is the statement made to me. He bled profusely.
- 22037 Mr. Dinkler Q You saw his back? A No.
- 22038 Q How long was it after the occurrence that you were told? A Well, very recently he told me.
- 22039 Q Do you refer to the fall of two years and six months ago? A Yes.
- 22040 Mr. Dinkler Q At the time? A Yes.
- 22041 Q I should like to see it? [No answer.]
- 22042 Mr. Dinkler Q From whom was this report? A The underground manager gave it to me verbally.
- 22043 Q Did he mention this fact to you? A No, he did not; but the men were terribly frightened—they were terrified at the time.
- 22044 Mr. Dinkler Q Did you report this to the Department? A No.
- 22045 Mr. Dinkler Q You are not supposed to? A No.
- 22046 Q You do not report cases where there is only bleeding from the skin? A No.
- 22047 Q And where there are no bones broken? A No.
- 22048 Q How you got my check with you showing the place in the mine? A Yes, I have.
- 22049 Q How it looks prepared lately? A Yes.
- 22050 Mr. Dinkler Q When it prepared by you? A It was prepared under my instructions.
- 22051 Mr. Dinkler Q You say that it represents the working of the mine exactly? A Yes, it is a tracing of the plan.

[At this stage the further examination of the witness was adjourned, and the Commission, at 4 p.m., adjourned until 10 o'clock the following morning.]



TUESDAY, 2 MARCH, 1903, 10 a.m.

[The Commission met at the Supreme Court, King-street, Sydney.]

SITTING:—

C. B. R. MURRAY, Esq., D.C.J., (PRESIDENT).

D. A. W. ROBERTSON, Esq., COMMISSIONER. | D. RITCHIE, Esq., CLERK.

Mr Bruce Smith, Barrister-at-Law, instructed by Mr Wood, Crown Solicitor's Office, appeared on behalf of the Crown.

Mr A. A. Arlison, Chief Inspector of Coal mines, assisted Mr Bruce Smith.

Mr A. A. Lynght, Solicitor, appeared on behalf of:—

- (a) the representatives of deceased miners, relatives, &c., (victims of the explosion);
- (b) the employees of the Mount Kembla Colliery, (miners, who, I am, &c.), and
- (c) the New South Wales Colliery Employers' Association (the Southern Mines' Union).

Mr C. G. Wade, Barrister-at-Law, instructed by Messrs. Gorton and Davy, Solicitors, was present on behalf of the Mount Kembla Coal and Oil Company (Proprietors of the Mount Kembla Mine).

(Mr J. Gethick, Secretary to the Commission, was present to take shorthand notes of the evidence and proceedings.)

Mr JAMES BAKER, previously sworn, was further examined as under:—

Examination in chief by Mr. Wade:—

22023. Q. Taking that first fall that we were talking about yesterday, Mr. Barn, did you say how far the lights were put out—I think you did—did you say a quarter of a mile or half a mile away;—how far did you say the lights were away that were extinguished by the first fall? A. Only a quarter of a mile.

22024. Q. Were there any openings, or was it a narrow passage closed up? A. All the working holes were open.

22025. Q. Is that the nature of it, then, that there were openings all the way down the whole of the quarter of a mile? A. Yes, pretty well.

22026. Q. Would there have been a chance to spread out on either side? A. Yes.

22027. Q. Now, with respect to the second fall you spoke of—did anything else happen besides what you told us about the boy being driven and pinned in the back with small coal? A. No, not the second fall. He was tumbled into the pit.

22028. Mr. Bruce Smith. Q. It was at the first fall that he got the coal in his back? A. Yes.

22029. Mr. Wade. Q. What happened on the second fall? A. He was tumbled into the pit. He was riding in front of his ship, and the air came and caught him and tumbled him into the pit.

22030. Q. Backwards? A. He was coming in against the blast. His horse was in front of him, and he was riding on the front of the trolley, and it caught him and upset him into the pit. He was standing with his foot on the bumper of the ship.

22031. Mr. Robertson. Q. The tip of the ship would get him behind the horses? A. He was standing on the bumper of the tub.

22032. Q. Then the top of the ship would get him behind his horses? A. No, not make any mistake about that. It took a good bit to turn him, because he was supported by the end of the tub, and he had to be tumbled right over.

22033. Mr. Robertson. Q. Suppose this is the end of the ship, and you are standing on the bumper; how much would it take to tumble you over there? A. Suppose I am standing like that [standing sideways on the jury box], it is going to take something to tumble me over there [the other side of the box and round the jury box].

22034. Q. What is the height of the ship? A. 2 feet 2½ inches from the bumper.

22035. Q. Is it not 2 feet? A. 2 feet 2½ inches.

22036. Mr. Wade. Q. What was the wheel? A. He was a young man.

22037. Mr. Robertson. Q. Was he very tall or short? A. He was a lean, I suppose, about 5 feet 8 inches, or 2 feet 5½ inches.

22038. Mr. Wade. Q. Would he be able to stand upright there? A. No, not exactly.

22039. Mr. Wade. Q. How was the road? A. The road was all right.

22040. Q. As regards his head? A. It was a trifling place.

22041. Mr. Robertson. Q. He was about 2 feet 5 inches? A. Yes.

22042. Q. And your ship is 2 feet 2½ inches from the bumper? A. Yes, fully that. I am not going to give you it exactly to an inch or 2 inches, but it is thereabout.

22043. Q. Then 2 feet 2 inches of his body would be above the ship, and 2 feet 2 inches below? Taking the height of that wheel as 5 feet 8 inches, then 2 feet 5 inches of the legs would be from the bumper upwards? A. Well, our wheels are 12 inch wheels.

22044. Q. But there is no need to go into the question of the size of the wheel;—you have already told us that he was standing on the bumper, and that from the bumper to the top of the ship was 2 feet 2½ inches? A. Yes, but he was in a sleeping position.

22045. Q. How do you know that? A. Generally speaking they are. I know man, too. That is all I know.

22046. Q. Did you see him on the occasion? A. No, but on a general rule, I have met them every day, usually.

22047. Mr. Bruce Smith. Q. Do they go about with their knees bent? A. Yes, they have their feet on the tub.

22048. Mr. Wade. Q. On your roadway, standing on the bumper, would a man 5 feet 8 inches stand upright? A. No.







22111. Q You say this, that if it did pass the return and strike it would have to demolish the return, and that the intake, instead of going on in Horner's light at all, would come through, and would strike towards the furnace, increasing the velocity towards the furnace, but decreasing it towards Horner's? Q Yes; if the intake had had sufficient pressure to overcome the blast that came out of the 4th light and the return as well, but if it was sufficient to go through the return and also carry the intake with it, it would increase the velocity down to the right, as it was pointed out to me.

22112. Mr. Howe? Q Does not it seem that the question whether one is an intake and the other a return, whether there is that slow motion up or down, is absolutely immaterial when it is compared with and related to such a volume of air as you assume that the bell would have to cause to do anything at all? If the air came out of the 4th light with sufficient velocity to carry away the dust, and to shoot across the return and into the intake as it will, doesn't you see that the question of the motion of the air, whether intake or return, is absolutely immaterial? It is, in fact. Thus we don't notice, you can shoot it as air at rest. It is rather less to try to co-ordinate two motions of that kind so that the velocity neither can nor affect the infinitely larger one.

22113. Mr. Howe? Well, it is a natural law.

22114. Mr. Wade? Q You started with the return being blown down. I want to know what blew the return down? A. Force.

22115. Q From where? A. From the 4th light.

22116. Q If that blew down the return down, where do you think it would go? A. Well, according to what I saw there it split in the intake, and one portion went under and the other portion went out to the right.

22117. Q Do you think the force of the current of air was great when it was great?

22118. Q Do you think the force of the current of air was great when it got into the main No. 1 road? Q Yes, it was great, there is no doubt about that.

22119. Q If you got a strong current there, do you think that Horner's light would have been able to live, and allow of the splitting of gas which might be in the current of air? A. Saying that there were two currents there, and considering the force that I saw there, I think it is an utter impossibility. That is my opinion.

22120. Q I do not see how you bring in the second current. If you have got your current of air from the 4th light, broken through the main return current, and on the No. 1 main road—A. And it struck the intake and returned, the first time in the light.

22121. Q The air would not shoot across until after you broke the return down? A. It could not shoot across at all. I do not seem to see that it would shoot across. I mean to say that it had gone there, and, striking the intake air, it would increase the velocity of the intake air.

22122. Q I thought you meant first of all, that it would shoot across? A. No, as it came out of there the force was so great that it had to overcome the intake air, and it was that much over balanced that it carried the intake with it and increased the velocity.

22123. Q Then you do not mean that, after the blast from the 4th light had broken the return current down, the air would shoot across? A. No. After the trouble was by, it would shoot across.

22124. Q After the blast had subsided? A. Yes.

22125. Q But while the blast was going out you are it could not shoot across? A. No.

22126. Mr. Robertson? Q I do not quite understand how you brought in that reference to short-circuiting? A. Well, I did not bring it in.

22127. Q But you did, distinctly, you said that the air would shoot across? A. What I wanted to show you, and you could have perfectly well, is that there was a narrow door between the intake and the return, and, if that door came out at the 4th light, first force had to cross the return; it had to be sufficient to cross the return and lift the return. Very well; then, the force had to be sufficient to overcome a natural law from the intake, had not it? Well, then, if it was strong enough to overcome that natural law—that is, to carry the intake air with it—would it not naturally increase the velocity of that intake? Would not it, now?

22128. Mr. Howe? Mr. Robertson is not here to be cross-examined, really. Mr. Wade seems to have got puzzled himself. We are all puzzled, I think.

22129. Mr. Wade? No. I see what he meant now, your Honor. He expressed it badly before. He did not mean that the air did shoot across; but he says that, if the air was sufficiently strong to force the return down, that it would go into the return and, if it was sufficiently strong to force the intake down, it would increase the speed of the intake and would not shoot across.

22130. Mr. Howe? That question of short-circuiting is absolutely immaterial.

#### Examination by Mr. Bruce Smith.—

22131. Q I want to ask you some questions about your experience. I understand that you have had several personal experiences of gas? A. Yes.

22132. Q Where was the first? A. In Scotland.

22133. Q Were you personally concerned in that explosion, or did you merely see the effects afterwards? A. Well, I felt them.

22134. Q How do you know there was gas in that case? A. Well, I saw it.

22135. Q You saw the flash? A. Yes; and I was burnt.

22136. Q And you were burnt? A. Yes.

22137. Q Where were you burnt? A. My head was singed and my face was scorched.

22138. Q Did you wear a head then? A. Yes, very little head then.

22139. Q Your hair was singed? A. Yes.

22140. Q What was the first upon your hair? A. It all curled up evenly.

22141. Q Crumbled up in your hands? A. Yes.

22142. Q With ballroom ends, and that sort of thing? A. Yes.

22143. Q And your witnesses that burnt at all? A. Only reddened.

22144. Q Did you see anybody else, by the bye, who had been burnt in the same way as yourself?

A. Yes, I have seen them burnt.

22145. Q Did you see three here? A. Yes, but I did not get time to examine it.

22146. Q What was your next experience of gas? A. I had another experience after that, but I cannot call it a little more fortunate.

22147. Q In Scotland? A. Yes.



Witness—J. Ben, 1 March, 1908.

22146. Q Were you bent at all? A No, but a man about 200 yards from me was slightly scared, too.
22147. Q Did you see him after he was bent? A Yes.
22148. Q What effect had it on him? A He was off his feet, too.
22149. Q The last effect I observed was as if a candle had caught fire? A Yes.
22150. Q The last effect I observed was as if a candle had caught fire? A Yes, I think he was very much scared, and the skin was dropping off his arm.
22151. Q Can you describe to the Commission what the effect was upon his skin at that occasion? A His skin was all bled down the arm, here, and hanging down.
22152. Q As if it had been a loose thing on the flesh? A Yes.
22153. Q Have you had any experience of gas war? A Yes.
22154. Q Was that about the same effect? A About the same effect, only it was more severe, and here, I think.
22155. Q Do you think the effect on the boy was just about the same? A There was not a hole left, hardly.
22156. Q Not on the skin? A Well, the skin was all lying in shreds, torn down.
22157. Q I want to get you to your experience of them falls, I think you told us you experienced one in England? A Yes.
22158. Q And you told us that you were yourself again half-a-mile away from the fall? A Yes.
22159. Q Was that the reason do you think, of all that you have experienced? A Yes, I believe it was.
22160. Q Was anybody else affected by that fall but yourself? A There were half-a-dozen of us then, and one boy got his leg broken.
22161. Mr. Roberts: What fall is this that he is referring to?
22162. Mr. Brown: I believe it is the fall.
22163. Q You were half-a-mile away from that? A Yes, about that. It was something like that.
22164. Q And were there other people down to the absolute exit of the air? A Yes, I believe there were.
22165. Q One of these had his leg broken? A No, he was on the same flat that I was.
22166. Q With regard to those who were much injured in the crash, how were they kept? A They were not kept at all. They tumbled in some way by getting behind the plane, sheltering away from the main force.
22167. Q Then I understand that the principal injuries on that occasion were that you were rolled over? A And others as well.
22168. Q And I suppose, you were injured? A Well, I got a knock or two.
22169. Q And the boy got his leg broken—and suppose he struck something? A He was lashed against a wall, and rolled over two or three times.
22170. Q And that was the extent of his injuries? A Well, besides.
22171. Q Not on either head of injury? A No.
22172. Q Now, was your first experience here, that is the one in which the lights were extinguished a question of a mile away,—I understand you to say that the whole of that night, or whatever time came from, was open right along? A Yes, with the exception of the plane when it started to come out there, was open right along.
22173. Q There was a pillar left, and then it was open in all directions.
22174. Q There was a solid base, and that the extent of the fall was about 30 or 32 yards? A Yes.
22175. Q And on which side was the air forced out—the forward side, or the upward side? A In the direction of the 30 yards.
22176. Mr. Roberts: Is that from your recollection, or from measurement on the plan? A Measurement on the plan.
22177. Q Exactly? A Yes.
22178. Q It seemed to me, just looking at the plan, a good deal more? A No. It is to scale; you can measure it. I have it here.
22179. Q I would like to examine it, if it may be wrong.
22180. The plan was produced and shown to the Commission, to whom it was explained by the witness.
22181. Mr. Brown: Q You are satisfied, Mr. Ben, now from the diagrams you have had there, that, with regard to that first fall in November, there was one outfit? A Oh, yes, it had one to the rear as well.
22182. Q There was only one outfit in the direction of the boy who was affected by it? A Yes.
22183. Q It had other outfits to our right, but there was only one outfit in the direction of the boy? A Yes.
22184. Q The boy, you told us, was knocked once into a tank?
22185. Mr. Roberts: No, that was the boy with the small coal in his back.
22186. Q The light was put out a quarter of a mile away, and the small coal was driven into his back—what led to it? A He would have had shot at.
22187. Q Just bullets and gunny? A Yes, something like that.
22188. Q And some of the small coal was driven with such force that it went into his back? A Yes.
22189. Q Was anybody else injured? A No.
22190. Q On one second occasion a boy was lashed over into a ship, and he was injured, I suppose? A Well, he told us he was very much lashed and injured.
22191. Q And he might have been burned? A Yes.
22192. Q Was there any other injury to anybody by that fall? A No.
22193. Q Then, on the third occasion, three miles off, when the wheeler had three falls, the horse was blown in the head end? A Yes.
22194. Q And I suppose he was very much knocked about? A I do not think he was much knocked about.
22195. Q Was any other injury done? A No, we were down the timber carried away by the falls.
22196. Q Now, on those occasions when you experienced gas and burning, and so on, would the description about the case [reading from the deposition before the Commission's Report] "During up of the water skin, the man actually described, and only cried 'A'! Well, it was described: my head was like a blackfellow's, and there was very little hair left. That is all I can tell you."



22209. Q I want you to tell the Commission whether, on any of these things occurring on which these falls took place, there was anything that corresponded with the burning or the smouldering of the hair of anybody? A No.
22210. Q Was there any effect upon the skin, in any case that corresponded with what you have described as resulting on the occasion when you saw gas? A From the falls?
22211. Q Yes? A No.
22212. Q You might tell me, quite apart now from what I have been asking you, about the effects on the occasion of these falls—the coal was out, I take it? A Pretty well.
22213. Q What kind of signs were it? A Notice dust and clay in that particular place.
22214. Q A good deal of the information that you have given as about the falls was, I suppose, got from other people. I mean as to the parties in which the boy fell? A Yes.
22215. Q And the tale being turned round? A Yes.
22216. Q That is got from other people? A Yes, that is right.

Cross examination by Mr. Lysaght.—

22217. Q Do you hold a certificate by examination? A No, I hold it by service.
22218. Q Service in this State? A Yes.
22219. Q And did you get that certificate shortly after the 1896 Act was passed? A Yes, I think so.
22220. Q Do I understand that you have never studied theoretical works on mining? A Oh, no, you do not understand that.
22221. Q Do I understand that you have studied? A Well, in a way.
22222. Q Well, you know all the most words of gases, and things like that? A Well, I do not know, that is a big question and covers a large area.
22223. Q Do you know what proportion of coal-dust is dangerous? A Well, it is given now by some of the test books to be 1 per cent. in some cases, and 2 per cent. in others, and so on.
22224. Q You were in Kewells Mine after the disaster? A Yes.
22225. Q How many days? A I went there on the Saturday night, I was in on the Sunday, on the Monday, and on the Tuesday.
22226. Q And you know that there were considerable quantities of coal dust about the roads in some places? A Yes.
22227. Mr. Edwards: I do not think the witness quite understood your question as to what proportion of coal dust was dangerous, Mr. Lysaght, as to whether you meant coal dust or fire-damp.
22228. Mr. Lysaght: [Q] You said 1 per cent. was dangerous—1 per cent. of what did you mean? A Well, fire-damp along with coal dust.
22229. Q I was not talking about fire-damp at all. I was asking you all about coal dust at present. Now you do you know what proportion of coal dust is dangerous? A Oh, well, the proportion of dust—if it is very thick, it is dangerous.
22230. Q What do you mean by "very thick"—what is your idea of what concentration of coal dust on a roadway is dangerous? A Oh, well, when it begins to get thicker than it is there was something done with it.
22231. Q Then do I understand you to say that anything under one inch on a road is not dangerous? A Well, if it is of a damp nature.
22232. Q I am not talking about being damp; I say dry? A Well, in some places it would be dangerous under certain conditions.
22233. Q Under the conditions of a blowen out shot with 1 per cent. of fire-damp, or 2 per cent. of fire-damp, how much coal-dust would you say was dangerous? A Oh, well, if it was there an inch or two thick, and within the radius of a shot, it would be dangerous.
22234. Mr. Edwards: Q What do you mean by that? A One inch, if it was within the radius of a blowen out shot, would be dangerous.
22235. Mr. Lysaght: Q Do you not know that it has been established that a few ounces along a roadway are dangerous under certain conditions? A It is quite possible under certain conditions.
22236. Q How many ounces and that? A Not a few ounces. No, I have not I would very much like to see it, too. I would thank you to show it to me.
22237. Mr. Bruce Smith: Q You mean you would like to see the authority?
22238. Mr. Lysaght: Q You mean to me that you have never heard of the authority who said that? A I say, where there is a little coal dust within the radius of a blowen out shot, it is dangerous.
22239. Mr. Edwards: Q Where is it you would very much like to see—is it the authority or the effect? A I would like to see the authority.
22240. Q You would like to see the authority for the statement Mr. Lysaght made? A He talked about a few ounces—that is the way he put it to me.
22241. Mr. Lysaght: Q You ought tell me what have you read are scientific works on mining within the last five or six years? A Oh, yes.
22242. Q Have you read Atkinson Brothers on coal-dust explosions? A No, I do not think I have read them or coal-dust explosions?
22243. Q You ought tell me then what proportion of fire-damp do you say is dangerous—what percentage? A That is what condition?
22244. Q Well, if it were a given off fire-damp, what percentage do you say is dangerous? A Oh, well, when it is given off and can be detected in an ordinary white-lamp, it is always reckoned dangerous.
22245. Q That is the authority. Mr. Chaffey has stated that 1 lb of dust or 100 cubic feet of air is necessary in order to form an inflammable mixture; whereas 50 square feet area, then 1 lb of dust is required for each length of 5 feet, or a quarter of a pound in each foot? A Well, you put it to me in words. I said I would like to see the authority.
22246. Q Is not a quarter of a pound 4 ounces? I say to you now, do you know that 4 ounces of dust per foot of a roadway is dangerous? A You did not put it per foot.
22247. Q Did you know that was dangerous? A Yes.
22248. Q If you know that is dangerous, I want to know did not you observe dangerous conditions in Kewells Mine?
22249. Mr. Edwards: I object to that question.



22130—2 Nov, 3 March 1962.

- 22130 Mr. Zarghi] Q Did not you observe over a quarter of a pound of dust there on the mud per test? A Where dust were dust?
- 22131 Q Were dust that was on those pistons? A Yes.
- 22132 Q Did not you see 4 ounces and over? A Yes.
- 22133 Q Therefore, there were 4 ounces or more? A Exactly.
- 22134 Mr. Webb] I object to that question. It is absolutely useless and unproductive to ask such facts to me after the explosion. If he had seen 4 lb. fine, there might be something in it.
- 22135 Q We know that everything was much smaller after the explosion.
- 22136 Mr. Webb] Do you get the witness focused as an expert, Mr. Wade?
- 22137 A Webb] It is pretty obvious that I do not. I have asked him questions of fact only.
- 22138 Mr. Zarghi] Q You do not give us an expert? A No.
- 22139 Q What, in your opinion, caused the No. 1 disaster? A A fall.
- 22140 Q Yes and what else first? A I mean to say that there was a displacement of air in the No. 1 (meaning the 4th Right), which was forced to a point in the main road, and divided there in the direction of the forces I saw there, one portion going into and another going out. The portion that went (the upper) up, hit the top of the tube away from the wheels, and the wheels away from the frame, and in one case a wheel was blown from its axle. Helices and everything else, and steel clips attached to the steel wire ropes, were dropped along with tremendous force, and the friction was that great from those clips that for was produced.
- 22141 Mr. Robinson] Q What produced fire? A The clips between the steel wire helixes rope, and the great force that went in there dragged those clips along with the helixes a considerable distance, and that caused the friction cause fire.
- 22142 Mr. Zarghi] Q After the fire was caused by the friction of the clips, what caused the disaster? A It produced fire, just reaching the cable as you could see lightning in the darkness. It was equal to 100 lbs. the air was compressed as it went by, and it struck the leading face of No. 1 and rebounded there.
- 22143 Q That is air? A Yes, and I take it there was a slight explosion.
- 22144 Q Of what? A Of air—oxygen.
- 22145 Q Explosion of air? A Yes, by the rebound.
- 22146 Q What, without any gas? A Yes, it exploded there.
- 22147 Q Without gas? A Well, yes, it was heated up to such an extent that a slight explosion took place.
- 22148 Q Was there any flame, do you say? A Yes, there would be a little flame, from somewhere as another in the face of No. 1 somewhere.
- 22149 Q And that is the only place where flame would be there, according to your theory? A As far as I travelled through the whole of the mine there is no trace of smoke or flame anywhere.
- 22150 Q Do you know that at least two or three men were burnt at the tunnel mouth? A I would not be a bit surprised at that.
- 22151 Q Will you tell me what burnt there? A Hot air.
- 22152 Q Yes, burnt with flame? A With flame?
- 22153 Q Yes. Now, will you kindly tell me how the heat that you say was right up No. 1 caused all the friction of the clips? A That is only part of the reason.
- 22154 Q Where was the other friction that produced the heat? A The friction of the rope, and the tube, and the cables, and everything else.
- 22155 Q That is only why, yet I was talking of air? A The same thing applies air.
- 22156 Q Can you show me any evidence of flame where there were (the helixes, or anything else like that, outside of the 4th Right)? A Yes, I saw. Just along between the 4th Right and the 4th Left, and on the back helix, where the rope had come round to the 4th Right, the tube was all set up there.
- 22157 Q Is that all regarding the generation of heat, the friction? A It was all the way.
- 22158 Q Is that all you want to say regarding the generation of heat? A Yes.
- 22159 Q Well, you tell me how you, yourself, were being burnt at Frank's Flat, right away up there (pardon me, please, that is the place)?
- 22160 Mr. Webb] There is no evidence of men being burnt up there.
- 22161 A Well, there was a great force sent there? A Yes.
- 22162 Q Where did that great force come from? A It came — [Interposed]
- 22163 Q It came in the 4th Left and went right along to Frank's Flat? A When the force came out of the 4th Right it was heated to a certain extent, and it would tend to expand, and a portion went up the 4th Left to Frank's Flat (expanding the mine by pushing up the center of the pipe).
- 22164 Q Now, will you tell me what temperature, that air was, in your opinion? A Well, now —
- 22165 Q Do you know anything about the temperature? A I could not say exactly what temperature, it would be pretty hot to me.
- 22166 Q What is your idea of "pretty hot"? A Anything under water boiling (meaning the boiling point of water).
- 22167 Q Can you tell me how many degrees, have you any idea at all? A I could not say, neither could you or anybody else.
- 22168 Q Do you tell me that that heat is the only heat there? A There was heat enough there to do it.
- 22169 Q But there was no flame? A I say that there was flame, I think, and I believe if flame was produced at all, it was up here at the face (pointing to the face of the No. 1 just behind).
- 22170 Q I want you to be the position where the flame was. You say it was at the back heading? A No, when that force went up there, it struck the solid frame and rebounded, the same as if you struck a ball so that it will there.
- 22171 Q And you say that was what caused the flame? A Yes.
- 22172 Q Well, you tell me all my authorities that are all explode and cause flame, air without gas?
- 22173 Mr. Webb] Ask him do he say we should gas would cause flame.
- 22174 Mr. Zarghi] Q You told us that the air exploded and caused flame? A Well, I expect the oxygen and what was in there was compressed to such an extent — [Interposed]
- 22175 Q Now, let me understand you, do you say that oxygen, being compressed, exploded and caused flame? A I say that the air was forced up to such an extent when it came back there, when it rebounded up there, and it came in contact with free oxygen, that flame was produced.



22553. Q Without any percentage of incinerated hydrogen? A Yes.
22554. A. [Interj.] Q This is pure fire you are speaking of? A Yes.
22555. A. [Interj.] Q Do you know of any authority at all for that? A I am giving you my own opinion.
22556. Q Do you know of any authority at all for the proposition that pure air— [interrupted].
22557. A. [Interj.] Mr. Lyngby, is it necessary to continue it any further?
22558. Mr. Lyngby: Very well, your Honor.
22559. Q When did you first get that theory? A When did I first hear it?
22560. Q Yes? A Never, many years ago.
22561. Q When did you first tell it to anybody? A I immediately when I came out of the mine.
22562. Q To whom did you tell it? A To Mr. Melchers and to Dr. Robertson. I told him that it was no profound belief that it was a fall that caused the whole of the trouble.
22563. Q Have you discussed the matter with Dr. Robertson since? A No, never.
22564. Q Let us clearly understand it. From about the Saturday after the disaster to the present time, you have never, at any time, discussed the matter with Dr. Robertson? A Not the Saturday.
22565. Q Then from the Tuesday after the disaster up to the present, meantime you have never discussed that theory of the disaster with Dr. Robertson, is that correct? A That is correct.
22566. Q Had you not seen a copy of this plan before? A No, I thought I was of little use.
22567. Q Do you mean to tell me that, except yesterday, you had never seen a copy of this lithograph or plan? A That is so.
22568. Q Or had you never seen the rail way plan? A I have seen the railway plan, and I saw Mr. Atkinson with a skeleton plan at Kambli.
22569. Q Until yesterday you had never seen a recent plan of the mine? A I do not know whether it was a recent plan or not; it was a bird's-eye view; I saw that looked like it very much.

[Witness ceased.]

22570. (Mr. Wade asked the Commission to grant him an adjournment until 2 o'clock, (from 11:35) in order that he might consider whether he could not dispense with the evidence at the residence of the witnesses he had called, with the exception of Dr. Robertson. Dr. Robertson was not available at the moment; and Mr. Wade would see if he could get him by 2 o'clock.)
22571. Mr. Lyngby asked whether Mr. Rogers, the Manager of Mount Kambli Mine, was to be called. At the request Mr. Lyngby said he was prevented from asking a number of questions, because they were considered to encroach on the functions of the Commission.
22572. His Honor said that the Commission was under the impression that Mr. Rogers was to be called.
22573. Mr. Wade said that he had decided not to call Mr. Rogers, because he could see, by the available evidence at the request, that there was no evidence to incriminate Mr. Rogers in any way. Mr. Rogers was a very bad witness, and at the request advantage had been taken of that, notwithstanding Mr. Wade's protest. Of course the Commission might call Mr. Rogers if they wished, but Mr. Wade had decided not to call him, as he did not think it would be fair to Mr. Rogers, in view of the indications from time to time that it was desired to get out from him some statement to be used afterwards to his detriment.
22574. Mr. Lyngby said that he desired to show that Mr. Rogers was an absolutely incompetent manager, and would ask the Commission to find that.
22575. Mr. Wade said he took the point that it was not a function of the Commission to find whether Mr. Rogers was incompetent or not.
22576. His Honor pointed out that, in the words of the Commission, they had to find whether Mr. Rogers was or was not to be called.
22577. Mr. Wade drew attention to Mr. Atkinson's evidence and said that, if Mr. Atkinson's theory was correct, no one was to blame. Mr. Atkinson did not even connect the disaster with the decision to inspect the gas once a week; and further Mr. Atkinson had said that it was a matter that could not have been foreseen, because in fact that gas never had been found, as it is his right, that the coal was previously all out of the gas, and the gas, if there was any, according to Mr. Atkinson, probably came from the shaft, and if so, it could not have been foreseen. The only object Mr. Lyngby could have in calling Mr. Rogers would be to extract from him some statement to be used against him afterwards, as there was a request made by the miners to have his certificate cancelled. With all respect to the Commission, Mr. Wade would not submit Mr. Rogers to such a possibility.
22578. Mr. Bruce Smith said that the propriety of calling the Manager ought not to depend on the possible consequences of his examination, and it would seem a very inefficient and very unbusinesslike sort of investigation of a great disaster of this kind if the level and level of the management, who had charge of the mine, was not brought before the Commission to give his account of it. One very important piece of evidence which the Commission had not been able to get so far was the number and extent of the pillars left in the B-manue gulf. It would be a matter for comment if the Manager were not called. If Mr. Lyngby were to mislead his position by using such questions then did not come within the limits of the investigation, His Honor would protest Mr. Rogers.
22579. His Honor and the Commission were all agreed that Mr. Rogers should be called; and, if, as was also called, him the Commission would call him. Mr. Lyngby would certainly long within the limits of cross-examination. His Honor did not think that Mr. Lyngby would go beyond the fair limits of cross-examination, but, if he should, it would not be allowed.
22580. Mr. Bruce Smith said he thought Mr. Rogers knew a good deal more about the mine than he showed at the request. The purpose of examining Mr. Lyngby, Mr. Rogers appeared to have taken up the attitude at the request of not knowing anything. Mr. Bruce Smith was sure that Mr. Rogers had much more practical knowledge than he exhibited in his examination on that occasion, and it would be a positive benefit to him to appear before the Commission to remove the impression that he exhibited an ignorance of practical matters, an impression which might have a very serious effect upon his reputation.
22581. Mr. Wade then asked for an adjournment until 12 o'clock.
22582. His Honor granted the adjournment, and the Commission rose until 12 noon.

[The Commission resumed at 12 noon.]

22583. Mr. Wade: I have not been able to get hold of Dr. Robertson, your Honor; but Mr. Leitch is here, and he might be called.
22584. His Honor: Very well.



Mr. GEORGE LEITCH was sworn, and examined as under:—

Re-examined in chief by Mr. Wade.—

- 22017 Q Your name is George Leitch? A Yes.  
 22018 Q And what are you? A Manager of Standard Mordue Colliery, West Halkin.  
 22019 Q How long have you been Manager there? A A little over eight months. I took office on the 15th of June, last year.  
 22020 Q You had been at Mount Kemble before that? A Yes.  
 22021 Q When did you leave Mount Kemble? A On the 7th of June.  
 22022 Q And how long had you been there? A Two years and some weeks.  
 22023 Q In what position? A Under manager.  
 22024 Q In stopping out your work as under manager, how often would you be in the mine? A Every day.  
 22025 Q Do you know any working day? A Every day except Sunday, and sometimes on Monday if any alterations were wanted.  
 22026 Q Would you be in different parts of the mine? A Yes, in different sections. Of course I could not get through the whole of the mine in one day. I used to take a section.  
 22027 Q Could you say you had a good knowledge of every part of the mine? A I had a thorough knowledge of every part of the mine.  
 22028 Q And the conditions of working, and things like that? A Yes.  
 22029 Q Now, what you were there, did you ever come across fire-damp? A Never.  
 22030 Q Was it ever reported to you by anybody? A It is never so reported to me while I was under manager.  
 22031 Q I suppose you have heard of the old case of Gallagher being burnt? A Yes, I had heard about that.  
 22032 Q I am sure that was previous to the furnace and the such going down.  
 22033 Q That was fourteen years ago? A Yes, just before.  
 22034 Q But when you were under manager during those two years at Mount Kemble, did you, during that time, ever hear of gas being found? A Never.  
 22035 Q Did you work in Scotland at one time? A Yes, I worked in Scotland from 1886 until 1893.  
 22036 Q Can you say whether fire-damp was known in that mine? A Never.  
 22037 Q Do you have any experience of lighting what they call the smoke, the powder smoke? A Do you mean after a shot?  
 22038 Q Yes, that is what I want to ask you—what conditions? A Of course, I have seen it in so many instances after a shot, when the shot has done its work.  
 22039 Q Is that what you call a hanging shot? A Yes, and the smoke like, the incomplete combustion from the powder would be coming from the cracks.  
 22040 Q Was it always in the case of a hanging shot? A Yes.  
 22041 Q And do you know yourself whether there was any gas under those circumstances which might ignite? A Well, yes, under those conditions, with incomplete combustion of gunpowder, you see, there would be CO, and CO<sub>2</sub>, and sometimes a trace of CH<sub>4</sub>. There might be, from the coal-dust being heated it would shed a little CH<sub>4</sub>, but still the CO, and the incomplete products of the combustion of the gunpowder, would ignite when flame was applied to it. Thus, of course, sulphur would be present as a solid. There might be a certain amount of sulphur gas.  
 22042 Q You know the facts of the No. 1 mine heading? A Yes.  
 22043 Q Had they ceased working, were they standing idle, when you left? A Yes, they were standing.  
 22044 Q What was going on at that time? A We were heading and re-heading mine No. 1.  
 22045 Q Whereabouts, at what point? A About 9 or 10 chains out from the face.  
 22046 Q Was there a pig what is position when you left? A No, I had just finished the whole of the heading, and the laying of the rails and the putting on of the muckholes, when I left. It was finished, and I put them up the forelight I left.  
 22047 Q Were you over the telegraph before? A No.  
 22048 Q But you know the railway goes pretty well, I believe? A Yes.  
 22049 Q You see the 4th Left worked here? A Yes, here and here?  
 22050 Q No. There is the face of the working? A Yes.  
 22051 Q I want you to show us, from what point they began to break the road? A That is what I want a scale for.  
 22052 Q You can make one here? A It is not just where the cut-through, the first cut-through on the main heading above the back heading of the 4th Left heading.  
 22053 Q That is where the two C's are on the plan (CC)? A Yes. We started from just opposite that cut-through between the two headings. We started to break from there to here, about 4½ to the cut-through, within 2 or 4 yards of the cut-through where the cut-hole or gas into the back heading.  
 22054 Q How long were you doing that before you left? A From memory I could not exactly say—several days—it would be, I daresay, three or four days, but from memory I could not say without the books, without the papers. Of course, if I had the scale book I could say exactly. That is what we put the whole of the measured work into.  
 22055 Q Which heading were you heading? A The front heading.  
 22056 Q The front heading only? A Yes.  
 22057 Q What were you backing the road with? A With the stone as broken down from the roof.  
 22058 Q What was that stone? A Sandstone.  
 22059 Q Of course, you have told us that you never have yourself, or heard, of gas being found in Kemble? A Never to my knowledge.  
 22060 Q Is that the only reason why the lanes were stopped in No. 1? A The mine No. 1 was stopped simply because we had to break down the roof and re-head the road. That is the reason why the No. 1 front and back headings were stopped.  
 22061 Q Could you tell us up to what time men were entering in the front heading heading and gassing the road? A I could not tell you from memory.  
 22062 Q Up to how long before you left? A I could not say from memory exactly. I should say up to about between two and three months. I know they were stopped there when Mr. Bates made his examination in April.  
 22063



- 22392 Q So that this practically had been finished before April of last year? A That was certainly finished there. The last pay was from the 7th to the 30th of May, because I left on the Saturday following, and that was the 7th of June, and it was finished then.
- 22393 Q Is that the time of the inspection? A No.
- 22394 Q When did it begin? A I would not say when it began.
- 22395 Q When did it finish? A It finished the last work in May. It finished seven days before the 7th of June.
- 22396 Q Was any way the air current is shown on this plan now, the blue being the intake and the red the return? A Yes.
- 22397 Q When I want to ask you about the course of the intake in the No. 1 heading, edge of the 4th Right: when you left, was the intake course the way it goes on the plan now? A As it appears there.
- 22398 Q Were you yourself at the foot of either the front or back heading of No. 1 when it was laid? A Yes, front and back, on many occasions.
- 22399 Q Did you have a safety lamp with you? A Yes, on one of the occasions I was there it was with Mr. Bates.
- 22400 Q What was that? A That was in April, the last inspection he made with me before I left Kamble.
- 22401 Q Was the safety lamp used then? A Yes, a new Balford safety lamp was there used.
- 22402 Q Was there any sign of gas lying in those headings? A None whatever: we could not find a trace.
- 22403 Q You say you were up there on many occasions? A Yes.
- 22404 Q What would you be with them—what light? A A safety light. It was inspected every morning, you see, under the ordinary inspection.
- 22405 Q Mr. Robinson? Q Do you say it was inspected every morning? A Yes, under the ordinary inspection.
- 22406 Mr. Wade? Q Up to when are you speaking of now, up to the time when you left? A Yes, up to the time I left.
- 22407 Mr. Robinson? Q They were standing then? A Yes, they used to go up through there and round the back heading.
- 22408 Mr. Robinson? Q Who was the engineering deputy then? A Dungey.
- 22409 Mr. Wade? Q And what was Nelson at that time? A Nelson was day-shift deputy.
- 22410 Q Then a change was made when you left? A Yes.
- 22411 Q Nelson and Dungey were both trained? A Of course I cannot say what took place when I left, only that I know that Nelson got my position. He was under-master.
- 22412 Q When these men working at these levels worked left on the plan here? A No, they were not working there. They were working lower down. They were not working those places then.
- 22413 Q How far away would they be working? A Three [unintelligible] feet by the 12-rodless post, but not between right and the main heading.
- 22414 Q When would the end of the road be? A The 7th of June.
- 22415 Q Now, from what you saw, could you say whether Kamble was a duty man or not? A Well, in some persons there was doubt, but in others it was pretty well.
- 22416 Q Let us take the No. 1 main road? A I would not, by any means, say that was doubtful.
- 22417 Q What is that? A That was not doubtful.
- 22418 Q Was there any water seeping in the road? A Yes, there was, between the 4th Right and the 4th Left.
- 22419 Q How was that lying? A The water from the 4th Left and the 4th Right pillars used to come down the 4th Right heading and down the back heading to the first cut-through, through that cut-through into the front No. 1 heading, and then it used to go along in a cut-through that was driven, and used to flow down through there into the old 3rd Left, so that, you see, that portion of the road was wet.
- 22420 Q Show me the course of that on the plan? A [Witness showed the course on the plan to Mr. Wade.]
- 22421 Q It would get into the main road just edge of the 10th Right? A Yes. You see 9 gates, in the first place, along the 4th Right.
- 22422 Q It went down through the cut-through where there are the figures 12 on the plan? A I could not say whether that was the position, but somewhere about that. Of course if I saw the ordinary plan I could say. There was no water lying in the 4th Right and nearly up to the 4th Left. It was damp nearly from the 4th Right to the 4th Left.
- 22423 Q Where did it come out of the 4th Right—down the roadway? A Yes, there was a scum in the 4th Right, two holes in, on the side of the 4th Right, top road.
- 22424 Q Is that made the road pillar? A Yes. That was a solid pillar; any water made in the area [the 35 were going] and falling that was (from top to bottom) of course the fall in that way—would be blocked against that pillar. Naturally it would go down that pillar, and the scum was there above the 4th Right on the bottom road. The water used to flow along that scum down alongside of the 4th Right into the back heading, and down the back heading into the first cut-through, and from that first cut-through into the front heading.
- 22425 Q Was there much water coming out lately? A Yes, there was a continuous stream running there. Before we drove that out through we used to get a water-baler on every night to bale it out.
- 22426 Q To bale out what, the scum? A Yes; there was a scum driven there for the purpose of collecting it.
- 22427 Q How long had you been baling that scum? A From the time I went there until we drove that out through. We used to bale regularly when I went there, and we afterwards drove that out through and allowed the water to flow straight down to the pump, and of course that then disposed with the baling.
- 22428 Q Do you know the 3rd Right? A Yes.
- 22429 Q Was there any water down there? A There was a little water from the 3rd Right.



- 22100 Q Where did first come from from the 25-acre woods? A Yes.
- 22101 Q How did that get away, where did it go to? A There were pipes there to take it away, and it headed then into what we called the old road going to the 4th street.
- 22102 Q That is along the shaft in the 1 foot woods.
- 22103 Q Now point to the 4th Right, the 25-acre woods do you know how long that 4th Right district had been settled, in your own knowledge? A We started to take out the pillars when I went there.
- 22104 Q When you first went there? A Yes.
- 22105 Q Had all the holes been driven then? A Yes, all these holes from the bottom end had been driven up to this point (indicating a point in the dirt on a pile).
- 22106 Q They drove them from south to north? A Yes, they were all driven up to that point, holes were working on the northern end of the pillars when I went there.
- 22107 Q And you had also begun to drive the pillars at that time? A Yes.
- 22108 Q Do you know what difference there was on the height between the eastern side of the 4th Right and the western side? A I could not tell unless I saw the levels on the plan.
- 22109 Q But there was some difference? A Oh yes, the grade was towards the 4th Right end. The 22110 Q Was that way. The fill was from the cross road leading to the north No. 1 heading, and to west.
- 22111 Q Using the whole time you were there, did you know of any pillar of coal being lost through the roof coming down all over it? A Yes, once a whole pillar of coal.
- 22112 Q Yes. A No, not a whole pillar.
- 22113 Q When was that? A The only one that was left in was whole when we would be finished off.
- 22114 Q When was that? A The only one that was left in was whole when we would be finished off.
- 22115 Q And how did the coal fall in that 4th right? A The 4th Right used to fall very well; it used to separate below the timber as a rule.
- 22116 Q What do you mean, supposing you drove the timber to-night? A If you drove the timber tonight the chances are she would fall below you left, or she would be down below the morning. Of course there are exceptions. I have seen it stand for two or three days, but as a rule it used to follow the timber.
- 22117 Q And the other fall, after that, the second fall, and so on? A Yes; you see the whole started to come for about 10 or 12 feet up when we took a fall in the 4th Right.
- 22118 Q You mean that work roof would be displaced? A Yes, 10 or 12 feet of it would fall.
- 22119 Q What fall are you speaking of now, the first or the second fall? A When you drove the timber—the first fall.
- 22120 Q What was left in the way of coal in the 4th Right when you left Mount Kemble? A Well, the pillars are not shown here. There were two pillars and a half in when I left there.
- 22121 Q And you were the men working there then? A There was one pillar and a half, not two pillars and a half. McNeil had finished that pillar and gone outside.
- 22122 Q Was a man named Roberts there at that time? A Yes, I believe he was made with Jim McNeil. No I do not think Roberts was there then. I think Adams Bradford was his mate then. I could not say without the coal sheet. I know that Jim McNeil was working on one pillar, and Jim Fitzgerald and his men on the other pillar.
- 22123 Q On the other side of the road? A Yes, one was working on the top side, and the other on the bottom side. There were not those two sticks to come out when I left, there were not two whole pillars to come out when I left, to complete the whole of the 4th Right.
- 22124 Q And how was the waste used those pillars? A Well, I know she used to fall pretty well then; and I have often seen it try to go up above, and we could not. You see she would fall down pretty tight. If a place falls down 10 or 12 feet up, and she comes down to the rib, it is a matter of impossibility for a person to get up between the rib and the stone.
- 22125 Q You mean the stone that falls alongside the rib? A Yes, she comes to the rib then and cuts it off, and it is a matter of impossibility for a person to get up between the stone then and the rib.
- 22126 Q And you say that was the condition of affairs when that pillar and a half in the mine you left, it had fallen up to this? A Yes, the men looking that was, that is the 4th Right that was, she was close down, you could not get up there, it was below down, and the pillars on either side—I believe it was McNeil, and Bradford and Jim Fitzgerald—on either side of that it had also fallen pretty tight.
- 22127 Q Pretty tight, you say? A Yes.
- 22128 Q Then, how far could you go in from the rib of the road pillar along the No. 1 road—how far could you go in along the 4th Right road—before getting blocked? A Only a pillar and a half. There was the level on the outside, and the next pillar was the pillar there were working—that is 25 yards from the back heading, from the pillar out the back heading that was 30 yards, and the width of the level would make it about 45 yards, so that the face at this heading would be within about 30 yards from the pillar rib. That is from the back heading the face then falling would be about 30 yards, say between 30 and 60 yards to make one, from the back heading of No. 1 up to the 4th Right.
- 22129 Q Were there any checks or bridle supports about the mouth of the 4th Right? A Yes in Jim Fitzgerald's place, that is the best head going north, the last level bridle off the 4th Right. There was a check outside of that working alongside the rib, however the rib of the pillar and the machinery, that is the ribs, and inside of that there were two checks, one on either side of the road—no, both on the top side.
- 22130 Q Mr. Roberts? A I was going to suggest that you might make a sketch of this heading as you left it. [Witness announced to draw a sketch.]

[The Comments appended at 11:45 AM T-45 for inclusion.]



## INTERVIEW.

[He running at 1.45 p.m., Mr. W. R. Frost attended to take shorthand notes of the evidence and proceedings.]

GEORGE LEITCH, previously sworn, was further examined, as under:—

Examination is read by Mr. Wade continued.—

22422. Q. What was left in the way of pillars?—there are two pillars standing on the other side of the right end of the goal? A. Yes.
22423. Q. That is, looking at the plan you are producing? A. Yes.
22424. Q. The road marked 42. Right is the road going into the 4th Right heading? A. Yes.
22425. Q. The length of road to come down after the 3rd Lane had been a road would be 40 yards on the south side of the 4th Right road and from 20 to 25 yards on the north side—that would be about 70 yards total length? A. Yes. The length would be 60 yards, that is, 40 yards and 4 yards, not 20 yards, making a total of 60 yards. Speaking from memory, I believe that they had not finished the second pillar when I left. I could not say for certain, but I think they were just finishing the last of the pillars. I could not swear that it was done. I put on a mark on the plan to show the pillars exactly as they were left. [The witness pointed on the plan, in thick pencil shading, to show the actual extent of what had done on 107 in the pillar further up at the rate he left them standing.]
22426. Q. Now I want you to mark where these checks were. [The witness marked a square well to the disposal of water running through it, indicating a place between the road and the pit.]
22427. Q. Would the check you mark be actually in the roadway? A. Yes; on the 4th Right heading.
22428. Q. Were there other checks? A. Yes, in a field.
22429. Q. Had that field fallen, were the checks still in use? A. No, it had not fallen then.
22430. Q. How far had it fallen? A. It had not fallen in for about 20 yards.
22431. Q. Twenty yards in distance, and what is width? A. There would be about 7 or 8 yards.
22432. Q. You would have to add that area on to the 40 yards? A. Yes.
22433. Q. That would be 20 yards by about how much? A. Twenty yards by an average of 7 or 8 yards for the width.
22434. Q. Was there a check anywhere else? A. There was a check on one side of the land and a check on the other side. There was one check on the 4th Right road, and there was one check on the side of McNeil and Stafford's place.
22435. Q. Do you know whether, in the ordinary course of working, when you come to the end of a district, those checks are taken out? A. When we come to close the district, we take the checks out.
22436. Q. Is that when the pillars are worked out? A. When we take out the timber, then, if possible, we take out the checks. Of course, you cannot always get them out.
22437. Q. Do you know whether it was the practice to get the checks out on the main heading? A. They would be ready to get out.
22438. Q. Were there any other checks between this plan and No. 1 last heading? A. There was a big one near the pump.
22439. Q. Where would the pump be? A. On the 4th Right heading.
22440. Q. Would that pump be laid out? A. It used to be laid out regularly, but after we drove a cut through there we allowed it to fill up, filled it all, and it ran into a gutter down the side. After we drove a cut through between the 3rd Left and the 4th Left the water used to percolate through there, but before that we used to take it out. It used to run by means of gravitation to where there was a pump, and was then pumped out.
22441. Q. You say there was a check near the pump,—on which side, the north or the south side? A. It was neither,—no, it was neither. I remember.
22442. Q. How far from the pump?—[Intercepted.]
22443. Mr. Robertson. As a practical man, it seems to me that this evidence about checks in, or across, water before the disaster can have no possible bearing on the matter at all, directly or indirectly, because a different disposition of the timber may have been made after Mr. Leitch left. This timber may have been withdrawn and other timber put in its place.
22444. Mr. Leitch. Q. Supposing that 4th Right had been finished, would there have been any occasion to pull them down? A. No.
22445. Mr. Robertson. Mr. Leitch cannot speak as to that. Between the date on which Mr. Leitch left and the finishing off of the pillars other circumstances might have arisen to cause these checks to be taken out and others put in their place. [Mr. Wade then put in the plan to which witness had been referring, and at the same time Exhibit 16.]
22446. Mr. Wade. Q. Do you remember anything about a door at the back heading in line of the 4th Right? A. Yes.
22447. Q. How was that door hung when you left? A. It was hung on the eastern side, so as to fall towards the front heading.
22448. Q. The hinges were where? A. If you were coming up the heading you would come to the door and pull it towards you. The hinges were on the right-hand side of the door.
22449. Q. Would it close itself? A. Yes; that door would not remain open unless it was propped open.
22450. Q. You told us of the condition of the walls at that 4th Right during the last two months you were at Kewick,—was it practicable to go into the mine? A. To go in?
22451. Q. Yes? A. No, almost it had fallen so much that—Of course, after the first fall a person might
22452. Q. Even when there was a first fall? A. It would not be safe.
22453. Q. Would it be safe to go into the middle? A. You could only get to where she had taken a second fall, and you could not get any further.
22454. Q. What did you make an examination of the goal edges? A. They were examined twice a day.
22455. Q. How? A. They were examined by the night foreman, before the commencement of each shift. If the foreman found any signs he would mark it for a length of timber, and it would be retained. The day shift deputy would do likewise.
22456. Mr. Leitch. I live in all assumption on the part of the witness.
22457. Mr. Wade. The witness is speaking of what used to be done on the mine.
22458. The Witness. I was speaking about day-shift men, and I was with him many a time, there is no assumption about that.



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- 22445 Mr. Kishel: Q Every day? A Not every day, but when I was in his district I would go round with him.
- 22446 Q You only went round to part? A I could not go over the whole of it. I would direct him as to when work should be done and I would see him examine the place.
- 22447 Mr. Wade: Q When you were there the men would be doing his duty? A Yes.
- 22448 Q Had you any reason to suppose that he was not doing his duty during your absence? A No.
- 22449 Q I object to this.
- 22450 Mr. Lupton: I object to this.
- 22451 Mr. Wade: Q The practice of the mine is all that the witnesses are sworn to.
- 22452 Mr. Wade: Q Is that a practice which you followed yourself? A Yes.
- 22453 Mr. Wade: Q Do you remember making any examination of the waste workings with Mr. Bates? A Yes.
- 22454 Q Was? A In April. That was the day when he had a new third lamp.
- 22455 Q Is that part? A We examined the waste up to the bottom of the 4th Right, and there was also an examination in the cross cut heading and the bottom of the 4th Right to the bottom of the 3rd Right, examination in the cross cut heading and the bottom of the 4th Right would shape, and as if we could get any gas at all. The reason we went there was to see how the lamp would shape, but did not get any fire-damp.
- 22456 I got up as high as I could and examined the waste present on any other occasions? A Yes.
- 22457 Q Then you examined the waste present on any other occasions? A Yes.
- 22458 Q In the 4th Right? A Yes.
- 22459 Q Did you come across any signs of fire-damp? A I never saw fire-damp in the mine.
- 22460 Q Did you find any black-damp on any other occasions? A Yes, I found it at the bottom of the 4th Right road.
- 22461 Q Do you think that those old stop-ends of coal that were left when you were finishing the pillars would catch any gas in the 4th Right? A I do not see how they could, because they had been standing there for some considerable time—between 12 and 13 years—some of them were only a little less than the coal left. If any gas was there it would have been drawn off long before then. The coal would be crushed down, however, when you drove the timber the coal would come on top and press it down.
- 22462 Q What was the road just near the end on the 4th Right? A Next to the great drive was an airway and called "Keeble" and next to that was the mainstone.
- 22463 Q Have you ever heard of gas being given off from the mainstone? A No, I have heard of gas being at Mount Keeble before, at the time Gallagher was burnt.
- 22464 Q Had that got anything to do with the work of the mine? A I could not say. I do not think I know there was more than afterwards from the place where the previous gas was found, because I have been there dozens of times and never saw any.
- 22465 Q Had that place been worked out in the mainstone? A Yes.
- 22466 Q With regard to the inferior coal, was it taken down by the mine? A Sometimes it was, and sometimes it was not. It depended where the pitting was. Sometimes the pitting was where the "blacks" and sometimes below it. Sometimes the "blacks" would come away with the coal.
- 22467 Mr. Wade: Q What was the thickness of the "blacks"? A From 1 to 3 inches. In some places you could hardly see it. In most places it ran between 4 and 6 inches.
- 22468 Mr. Wade: Q You know the rule that every working place is to be examined within four hours (commencing from the commencement of each shift)? A Yes.
- 22469 Q We have been told that the foreman would go into the mine at 9 o'clock at night to left side in different places? A Yes.
- 22470 Q We have also been told that the place, which they took the stams from, at 9 or 10 o'clock at night, would be worked on the day shift, and would only be examined once, before they went on to take the stams out. Did you ever know that happen to occur time? A Never to my knowledge. Sometimes we were given that three places had to be examined. The foreman was given of the place that had to be examined; and the deputies had to examine three places, and when they had done so they had to examine the whole of the place. I have had an occasion to doubt that this was done.
- 22471 Q Did you make that place to the deputies? A Yes, because we had a discussion on that point not long after I went to Kinnell.
- 22472 Q Who? A Mr. Rogers, myself, and the deputies.
- 22473 Q Was that purpose was the discussion? A It had reference to the examination of the mine.
- 22474 Mr. Wade: Q Was it a discussion in which you took opposite views? A No, it was simply as to the time when the deputies should start to examine. Every place must be examined. I said to the Manager, "Are you sure they cannot examine these places?" He said "Yes." I did not know what the rule was with reference to the taking of the stams. It seemed to be like a correct statement on the same night. I was asking the Manager what the rule was for it. It was for my own information. I wanted to.
- 22475 Q You say that he told you the rule was to examine the place twice? A Yes, and I have no concern to think that he was not telling me the truth.
- 22476 Q Did you have any discussion or talk about giving the deputies plenty of time—[Interposed].
- 22477 Mr. Lupton: I object to this.
- 22478 Mr. Wade: The question is, how the mine was managed. You cannot find out how every individual worker was working, but this evidence may be material with a view of showing what the practice was.
- 22479 Mr. Lupton: There are the Special Rules.
- 22480 Mr. Wade: There is some evidence to show that the Special Rules were not conformed to. There is nothing to prevent a question being asked with a view of showing how the mine was managed as far as the action of the officers are concerned.
- 22481 Mr. Wade: It may be open to the Commissioner to say that this witness was to blame, and I want to show that certain instructions were given and clearly.
- 22482 Mr. Wade: The reason it came up was because I asked for information, having gone to the mine a stranger. Also it came up as to the time given to the deputies to do their work.
- 22483 Mr. Wade: Was anything said about the deputies having plenty of time to do their work? A It was only mentioned—that was all. Some considerable time afterwards it was mentioned about them. If they did not have time, they ought to have, in that sense. At no time I remember it was said that if one deputy had not got time to do it, then they would get two deputies. They would get somebody to give him a hand. The system was that they could do the work within the prescribed time, and the deputies always said so.



22180 Q. You were out at Mount Kemble after the date on which you left? A. No, I have not been there since. I intend to get away, but I found that I could not. I should very much have liked to have gone there at the time of the disaster.

Continued by Mr. Bruce Smith —

22187 Q. Will you take your mind back to the day on which you left the mine? A. Yes, on the 6th of June.

22188 Q. Will you make a calculation and tell me what was the area of pillars and bords which were left unworked? [No answer.]

22189 Mr. Robertson: From what Mr. Smith says the bords were fallen.

22190 Mr. Smith: I wish to point out that it is not clear to me whether the 30-yard pillar was in, or whether it had been taken away.

22191 Mr. Bruce Smith: Q. I want you to give me the total area of unworked coal when you left? A. Including that pillar?

22192 Q. Yes. And then without it? A. Where do you want it to—in the 30-yard pillar?

22193 Q. Yes. I want the total area of pillars, on the assumption that the 30-yard pillar was left. Cannot you tell me whether the pillar was taken out? A. No, not from memory.

22194 Q. You cannot give the Commission the area of unworked coal at the time you left? A. I can never give you the last pillar.

22195 Q. Can you tell me the length? A. The length of the pillar was 40 yards.

22196 Q. I want to know the total area of unworked coal in the 30-yard goaf so the day of your leaving the mine? A. Up to the 30-yard pillar?

22197 Q. Yes. A. Remainder of the 30-yard pillar?

22198 Q. Yes, remainder of the 30-yard pillar? [No answer.]

22199 Mr. Robertson: There was one pillar and a half left.

22200 Mr. Bruce Smith: I can only get it from the witness up to the 6th of June, and I can get it from other witnesses afterwards.

22201 Mr. Robertson: He says there was a pillar and a half left. Would it not be better to ask him what was the area of the pillar and a half, and get it that way.

22202 Witness: You want the area?

22203 Mr. Bruce Smith: Q. Yes. If you say there was a pillar and a half left, I will ask you the area of that.

22204 Mr. Bruce Smith: I take it the evidence of this witness is with a view of showing what was the size of the area in the goaf where the fall was.

22205 Mr. Bruce Smith: It is with a view of showing the probable size of the area where the fall was.

22206 Mr. Bruce Smith: This evidence has a bearing on what given by Mr. Sellers when he was estimating a force of 300 miles an hour.

22207 Mr. Sellers based his conclusions upon the assumption of communicating or continuous amount of force to a moving body of air by applying to it a formula without the plate being in a state consistent with the proper application of his calculations.

22208 Mr. Bruce Smith: Q. What is the result of your calculation—the area of the pillar and a half which was left? A. About 650 square yards.

22209 Q. Now the bords had fallen? A. I am taking the coal.

22210 Q. And the bords had fallen? A. Yes.

22211 Q. Now, assuming after you left that there was no further fall until all the coal was taken out—never mind whether it was practicable or not—assuming that that is the total area which had fallen? A. You would also have the width of the heading.

22212 Q. What would be the width of the heading? A. There would be 100 square yards of heading.

22213 Q. Add that 100 yards to what you said before and what will it make? A. 750 yards.

22214 Q. Is there anything else to add? A. Of course, that is assuming that the whole of the board was down.

22215 Q. How much was not down? A. Twenty-five yards by 8 yards.

22216 Q. Put that in if you like? A. Yes.

22217 Mr. Robertson: Q. Is that where the shovels were? A. Yes; and that makes 1,242 yards.

22218 Mr. Bruce Smith: Q. And that would be the total area? Yes.

22219 Q. Now, during the time that you were in the mine you saw a large part of that coal was worked? A. Yes.

22220 Q. What proportion? A. I worked almost the whole of it in the 4th Right.

22221 Q. You told us so in what was the usual time it took to fall; if you took the pillars out, that it would fall either immediately or the next morning? A. That is usually so.

22222 Q. Were there many exceptions to it? A. No. I have seen a strong patch here and there.

22223 Q. Was there anything in the nature of the coal being taken out to lead you to believe that it would be different from the coal cut from the rest of the goaf? A. Nothing.

22224 Q. You would expect, when the later pillars were taken out, that the fall would be in the same way that it was before you left? A. Yes.

22225 Mr. Wade: The evidence is all one way—that it was cut.

22226 Mr. Bruce Smith: Q. That since which you were asked about. Is it a wonder day? A. Yes.

22227 Q. You, directed to the Commission the way in which the water came up against the big pillar and across into the intake, and there a westerly direction to the 5th Left? A. Yes.

22228 Q. Did it spread over the road, or was it in a narrow depression on the side of the road? A. It was in a depression in the side of the road.

22229 Q. Was the depression 6 inches deep? A. Yes, it was a gutter, but not 6 inches deep.

22230 Q. The water was constantly drained on the side of the road? A. Yes.

22231 Q. Is the ordinary way it never flowed over the road? A. If anything got into the gutter, it would.

22232 Q. It was all carried along the side of the road and did not wash the top of the road? A. No.

22233 Q. It would flow by gravitation? A. Yes; there was no pump there previously. There was a pump in the 4th Right, and out in No. 1.



Flames—A. March 3 March, 1894

- 22544 Q With respect to gas You told Mr. Wade that you never saw it, and never found it with the lamp. When you not told people that you believed there was gas in Kendall? A No, I never did. The person who told me that did not tell me the truth.
- 22545 Q You did not believe there was gas in the mine? A I did not believe it. I did not believe in what I heard of the accident.
- 22546 Q Did you ever hear of gas in the mine before? A No, not what I was under-suspense.
- 22547 Q Did you ever hear of its being found before? A I have not heard of any gas being found since the time Holligrove was burned.
- 22548 Q Did you not hear gas coming from the side of the wall? A I have heard a noise, I would not say it was gas.
- 22549 Q Did not your eye testify before you to find out what it was? A I heard the noise, but nothing of any consequence.
- 22550 Q How did you account for it? A I believe will do it very often.
- 22551 Q Was there any moisture when you heard the noise? A Yes.
- 22552 Q You accepted that as conclusive? A Yes, we tested many times, but never found it.
- 22553 Q How did you try to find it? A With the safety lamp.
- 22554 Q You never tried to light it? A After we tried with the safety lamp we put our lamp to it.
- 22555 Q A naked light? A Yes.
- 22556 Q To the noise from which you heard a noise being? A Yes.
- 22557 Q Without any intention whether or? A Yes, without any intention whether.
- 22558 Q You told the Commission that where what had been fired, and there was incomplete combustion, you have seen something more, if so that of Kendall? A No.
- 22559 Q Have you seen it in Kendall? A Yes.
- 22560 Q How did you distinguish as to the combustible parts of it. You talked freely about CO, CO<sub>2</sub>, and CH<sub>4</sub>? A I do not think you have got what I did say. I said that the result of incomplete combustion was that. That is what I said.
- 22561 Q You were giving us a little bit of chemical information? A I was asked for it.
- 22562 Q You did not mean to say that you saw any of that in Kendall? A No.
- 22563 Q What is your opinion now as to the way the remainder of the roof would fall? A From everything I see, I believe it would go on falling as it did before.
- 22564 Q It would fall when they took the timber out? A I think it would fall next morning.
- 22565 Q Do you think it is probable that the whole of that area would collapse until the coal was out? A It is not.
- 22566 Q It is physically impossible—do you think that it would? A There was nothing there to load on to believe that the stone was any harder than before. Of course, I must draw on my imagination. I do not know what was over the pillars.
- 22567 Q Do you think it probable that the roof would remain until the whole of the coal was out? A I cannot tell, I am not a prophet.

Cross examined by Mr. Loughton—

- 22568 Q I think that you said that, until you heard of the accident, you did not hear of gas in the mine, and that it was there in evidence? A I think you are talking something to it.
- 22569 Q Which, in your opinion, was the cause of the explosion? A I cannot say—I was not on the job, and I have not seen the place since, and I have not seen you there.
- 22570 Q What, in your opinion, caused that explosion?—[interrupted]
- 22571 Mr. Wade. Is it a fair question?
- 22572 Mr. Wade. He is asked whether he has an opinion.
- 22573 Mr. Loughton. I never saw any gas there, and I have never been to see the condition of the mine since, and now I am asked my view as to what caused the explosion.
- 22574 Mr. Wade. Q You do not consider yourself in a position to form an opinion? A If I had seen the place it would be different.
- 22575 Q And not having seen it? A I am not in a position to give an opinion.
- 22576 Mr. Loughton. Q In your opinion, did knowledge play any part in the disaster? A I never saw it. What is the point of my opinion? I cannot give an opinion on what I did not see.
- 22577 Q I do not ask you whether your opinion is an opinion on what I did not see.
- 22578 Q I cannot say what caused the explosion. You are asking me that was the advice you about disaster? A What is your opinion? A Can you form an opinion on what you did not see?
- 22579 Mr. Wade. Q Try to answer the question. According to the newspaper and the results, I should say that there had been a gas explosion, accelerated by coal-dust. But just a little time ago you said that nothing but I heard was not evidence.
- 22580 Mr. Loughton. Q Have you not said that there was a gas and dust explosion?
- 22581 Mr. Wade. I was in a useless waste of time. He says that, if he believes what he saw in the newspaper there would be no opinion.
- 22582 Mr. Loughton. Q Do I understand that you have no theory as to the cause of the disaster? A I never saw it. Have I not just told you what my opinion is?
- 22583 Mr. Wade. He has to be expressed an opinion, he has expressed it in your hearing.
- 22584 Mr. Loughton. Mr. Loughton wants me to see the mine this afternoon.
- 22585 Mr. Loughton. Which was the darkest part of the mine? Q It is not what you would call a dark mine in the expression of the word dark.
- 22586 Q Is that what I have asked you?—Which was the darkest part? A As a rule, the pillars.
- 22587 Q Which pillars? A In some pillars in the 4th Right. It was dry there. The lower portion was wet, but the upper portion was dry.
- 22588 Q You never walked the working road? A You say we never entered there.
- 22589 Q Is that a fact? A No.
- 22590 Q You did enter there? A Yes, we had there witness by a bucket and a dip.
- 22591 Q Did you flow water over the travelling road? A Yes, we have done so.
- 22592 Q Where? A In the shaft down.
- 22593 Q Did you water the neighborhood of No. 1 district? A No.



- 25586 Q. Do I understand that you carried a safety-lamp with you always when you were going through the pit? A. No, I did not.
- 25587 Q. What did you carry? A. A five-light.
- 25588 Q. Did you carry a safety-lamp when the Inspector was with you? A. No; he carried it.
- 25589 Q. Can you remember whether within three months of the time you left, you had been carrying a safety-lamp during your rounds? A. Never. I may have had a deputy's lamp, because one day we had to take it to test for gas.
- 25590 Q. Did you answer gas? A. No.
- 25591 Q. Did you carry a safety-lamp in Powell's Pit to examine for gas? A. I did not, that is not correct.
- 25592 Q. Within two months of your leaving the mine? A. I never carried it, unless with a deputy, or with the Inspector.
- 25593 Q. Do you remember making a report together in Powell's Pit for gas? A. A special one.
- 25594 Q. With the safety-lamp? A. I believe I did, but I did not usually carry the lamp with me.
- 25595 Q. Was that inspection with a safety-lamp in Powell's Pit? A. I forget now. I remember going with the deputy and examining a place. It was a place where they were going to start. I believe Hille Nelson and I made an inspection of the place near Powell's Pit in old No. 4.
- 25596 Q. Will you tell me the circumstances under which you made it? A. I want to have to start a place that had been standing for a number of years. That is all I can say in the matter.
- 25597 Q. Was gas reported there? A. No, I never did, so I told you — [interrupted.]
- 25598 Q. All right, I do not want any more, — gas was not reported? A. No.
- 25599 Q. Do you know whether Nelson discerned it on that occasion? A. No, he got to go on that occasion, because I was with him.
- 25600 Q. Is that the only occasion you saw a scumaker going with the safety-lamp? A. That is the only one, unless going with an Inspector.
- 25601 Q. You might tell me why it was you allowed the rule for the weekly inspection of the mines to be abrogated to a monthly inspection? A. It was the rule when I went there.
- 25602 Q. To have monthly inspections only? A. Yes.
- 25603 Q. You know the rules required weekly inspections? A. I have already told you that the mines were abandoned to lay a der.
- 25604 Mr. Rogers Q. Have you any reports of it? A. I have told you of it.
- 25605 Q. Do you see the reports? A. It was under General Rule 4.
- 25606 Q. Do not the Special Rules require that the reports shall be in writing? A. And then there are the mines always. We and the report always every month.
- 25607 Q. I ask you, do you not report that? A. No. They are inspections under General Rule 3, and no provision is made under General Rule 4 for the mine workings to be reported.
- 25608 Mr. Rogers Q. You mean waste workings contiguous to working places? A. Yes.
- 25609 Q. You do not mean that you examine the whole of the waste workings? A. No.
- 25610 Mr. Rogers Q. What do you call waste workings? A. After we have taken the pillars out, I would call the full length of the place a waste working. Is not that what you would call a waste working?
- 25611 Q. It is not for you to ask me questions? A. That is what I should say was a waste working.
- 25612 Mr. Rogers Q. Does not Special Rule 10 say that the deputy "shall at least once in every week examine, so far as is practicable, the state of the waste workings and main strays, and make and sign a true report of the same himself in a book kept in the office for that purpose?" Do you know what that rule means, — that it does mean when you are referring to? A. The inspection of the goal was done daily, and we had an inspection once a month.
- 25613 Q. I want to know why you abrogated the rule from once a week to once a month, — why was it not done once a week, as required by that rule? A. Simply because it had been the custom of the colliery to examine it once a month.
- 25614 Mr. Rogers Q. The custom before your time? A. It had always been the custom in connection with the colliery.
- 25615 Q. Before you went there? A. Yes.
- 25616 Mr. Rogers Q. Did you not take the Special Rules as a guide? A. I did.
- 25617 Q. Were there any other Special Rules you ignored as well as that? A. No, I carried them all out.
- 25618 Mr. Rogers Q. All excepting the one? A. Yes; and it was the custom of the colliery before I went there.
- 25619 Mr. Rogers Q. Did you draw the Manager's attention to the fact that the rule was not being carried out? A. Yes.
- 25620 Q. What was the answer? A. That it had been the custom of the colliery whilst he was Manager, and also the custom of the colliery before he was Manager.
- 25621 Q. Did you consider you did your duty? A. I was not Manager, I was under-manager. I pointed it out to him, and that was the answer. I quit.
- 25622 Q. Who was the Manager? A. Mr. Rogers.
- 25623 Q. Did Mr. Rogers give you any other answer? A. No, not that I am aware of.
- 25624 Q. Was any question raised as to what the rule meant? A. What do you say?
- 25625 Mr. Rogers Q. Can you tell the Commission whether any question was raised as to what the rule meant? A. Mr. Rogers was under the impression that it was referring to the rule. I said, "No," he was not. He said to me, because he was concerning the waste workings every day.
- 25626 Q. The impression was that they were examining them every day? A. Yes, he said that they were examining them every day.
- 25627 Q. But that was not an excuse for not having a report in writing? A. He told me that that was the rule of the colliery.
- 25628 Q. You took no steps to have it reported to the Inspector? A. No, I had no right.
- 25629 Q. Yes, knowing that the Special Rule had been violated did you report it to the Inspector? A. Mr. Rogers was under the impression that they were carrying out that rule.



Witness—March 2, 1904

22020. Mr. Stetson. Q Do you really believe that the daily inspection was an examination of the waste workings? A Yes, in some instances I was, but we have not examined the whole of the return workings.
22021. Q You were not examining the whole of the return workings? A Not the whole of them.
22022. Q Do you say you did not examine the whole of the workings? A Not the return workings.
22023. Q You say you examined the airways but not the whole of them? A Not the return airways going to the old workings.
22024. Q You mean that the whole of the intake airways were examined daily? A Yes.
22025. Q And the whole of the returns? A Not the whole of them. They were examined every second day following.
22026. Mr. Lippert. Q They were not reported in any book? A They were reported in the same book you had in your hands.
22027. Q Were they reported? A Yes.
22028. Q And specially mentioned? A Yes.
22029. Q As an examination of the waste workings? A Yes.
22030. Q There was in that book [holding up a book]? A That is not the book. That is the deputy's book.
22031. Q When the book you had in your hands when the other case was on? You looked at it, and you know it is there. I said that it was reported in a book under the form of General Rule 4, and specially mentioned.
22032. Q Where is that book? A I expect it will be down at the millery.
22033. Q We have been told that there was a fall in the 4th Right of 20 feet, a week before the disaster. That indicated that the roof was falling in the same way that it had previously fallen in the disaster. That indicated that it had fallen in a solid mass before? A I do not know whether you understand it or not. You will find that I said it fell from 4 to 8 feet in thickness.
22034. Mr. Stetson. Q Yes, but from 4 to 12 feet in thickness.
22035. Mr. Lippert. Q Knowing that there was a 2 foot 6 inches fall in your opinion, was there sufficient area left to fall to force out air at any great pressure? A There would be a sufficient area to cause a great pressure of air.
22036. Q That was at the time you left,—if we know, as far as it is practicable to extract pillars, that they have been extracted, and the roof was allowed to fall, would you then say there was sufficient area to fall to force out air with great pressure? A I said yes—but what do you mean by "great"? A Would it be pressure in your opinion, sufficient to blow out the stoppings along the 4th Right? A No—that is, the end in which the pillars had been taken out.
22037. Q As far as practicable, if they had extracted the pillars, there would not be an area of fall sufficient to create a force to blow out the stoppings in the 4th Right? A No.
22038. Q Now, this could place which you have produced shows that there are openings to the 4th Right throughout these pillars? A No, those make no difference.
22039. Q These were a part of the mine called the Old 4th Right—was that these 4th Right pillars? A No, there is a difference between No. 4 Right and the 4th Right. The other was the Old No. 4 Right.
22040. Q Were there any pillars to be extracted there in past times—not maybe before the disaster? A No, I do not think so.
22041. Q Tell me what is the meaning of this entry in a diary on the 17th of April, 1900, when you say that you went to attempt to get out some stacks of coal in Old No. 4? A That is in the shaft section—the pillars there.—[Interupted]
22042. I do not want the information if it refers to Old No. 4.
22043. Q I think in the 4th Left [travelling road, and rope road, there were several cross doors,—do you remember where they are? A There were cross doors at the junction of the 4th Left travelling and rope roads. There were also other cross doors lower down.
22044. Q They had nothing to do with it? A They have, because you want the Commission to believe that there were single doors between intake and return airways.
22045. Q How many doors through were passed before there was any main door? A Four doors.
22046. Q How many yards from No. 1 main level? A About 72 yards.
22047. Q A number of the openings to the goaf had no stoppings in them? A They were fenced across.
22048. Q I want you to tell me how many of these openings there were without stoppings on the north side of the goaf? A I do not think there were any.
22049. Q Just that for a moment? A I think the two bottom ones.
22050. Q And how many were there on the east side of the goaf without stoppings? A Oh, they were across stoppings.
22051. Q Were there any left without stoppings? A Not that I am aware of. You were between the 4th Right and the 4th Right.
22052. Q I am talking about the goaf on the east side? A Between where?
22053. Q Anywhere? A There were the 4th Right stoppings.
22054. Q Any others? A No.
22055. Q On the north side, how many openings were there without stoppings? A On the north side of the goaf, none.
22056. Q On the west side? A None, excepting in the 4th Right.
22057. Q Do you remember an explosion which took place on board a ship called the "Glimmer"? A The "Glimmer"?
22058. Q You know—she was taken with Keweenaw coal? A How long is that since?
22059. Q You remember her blowing up? A I do not think I do now.
22060. Q Have you never heard of her? A I have heard of her, and was her hundreds of times, but I do not remember her blowing up.
22061. Q You told us you discovered black-lamp in the 4th Right with Mr. Bates? A Yes.
22062. Q That is a poisonous gas? A Yes.
22063. Q Did you report it any book? A No. But it does not require.—[Interupted]
22064. Q That will do.



12084. *The Witness* [Your Honor, cannot I explain?]  
 12085. *Mr. Wade* [Mr. Wade will you stop afterwards.]  
 12086. *Mr. Leight* [Q Did the deponent complain of not having sufficient time to do their work? A Not to me.]  
 12087. *Q* Although you never saw gas in the mine, you know that it was a strain that got off gas? A No.  
 12088. *Q* Do you not remember that Mr. Kinsaiden stated that it got off gas? A I know he did.  
 12089. *Q* Have you any reason to think that he did not state what was correct? A The conditions of the shaft are different now.  
 12090. *Q* Do you mean the mine? A I cannot say that there is any difference in the coal. There was gas, and it was given off, but not the shaft district. That place has been tested over and over, but there was never known to be any gas there, or in the mine, until this disaster took place.  
 12091. *Q* You know that Mr. Atkinson discovered gas? A I saw it in the newspaper. I do not believe that any man would get it taken with the hydrogen lamp. I know he has ascended to the highest part of the mine.  
 12092. *Q* He got it with the safety lamp? A How much?  
 12093. *Mr. Atkinson* [Q Do you doubt it? A I was under the impression that it was with a hydrogen lamp.]  
 12094. *Q* Are you surprised now to hear it? A No, I am not surprised, after the explosion.  
 12095. *After Atkinson* [Q I suppose the explosion has had so much effect on your mind that you would not be surprised to hear of a few quantity of gas being found in that mine? A What I want to know is where it came from. I cannot say. I have been with the inspectors and deputies, and never saw it. It is hard to believe that it was found. Mr. Atkinson came to the highest part, and could not get gas.]

Resummed by Mr. Wade—

12096. *Q* You did not report black damp; will you explain why? A Mr. Leight pointed to the Rules but did not read them.  
 12097. *Q* Is there anything in them compelling you to report black-damp? A No, not black-damp, unless it is a dangerous condition. I saw a little black-damp there, but it was not dangerous.  
 12098. *Q* You know that there is a rule which states that workers have to report black-damp to the officials? A Yes.  
 12099. *Q* You say there were openings around the 25-acre waste? A Yes.  
 12100. *Q* Would they be of any advantage to the waste? A Certainly they would, that is how the 4th Right pillars got so much ventilation.  
 12101. *Q* Now, about the main door. What doors did you have in the 4th Left traveling road rope road when you left? A On the main rope road we had one door close to the junction of No. 1, one on the foot heading between the second and third horde.  
 12102. *Q* How far away? A Between 50 and 70 yards. There is one at Gull's Flat, about 120 yards from the junction, and one above No. 1's.  
 12103. *Q* Were those four altogether on the rope road? A Yes.  
 12104. *Q* On the traveling road? A There was a double door on the junction of the main No. 1, and the 4th traveling road, one on the main pillar, and a double door a head a length away—say, 20 yards apart—and three or four more doors between that and Kemp shaft.  
 12105. *Q* On the question of the inspection of the waste, after you mentioned the matter to Mr. Rogers, you took your instructions from him? A Yes.  
 12106. *Q* Did you differ with him as to the meaning of the Rule? A Yes.  
 12107. *Q* Now, I ask you this—although you never made any examination of what the Rule calls "the state of the waste workings and the main airways," once a week, but only once a month, was the examination which you made of the waste adjoining the working place, which was made daily, as effective for practical purposes?—[interrupted]  
 12108. *Mr. Leight* [I object to the witness answering that question unless he was there.]  
 12109. *Mr. Wade* [I will withdraw the question and just let another way to ask you.]  
 12110. *Q* The examination of the waste adjoining the working place that you saw the day-deputy make, was it as effective as making an examination once a week only?—[interrupted]  
 12111. *Mr. Leight* [That is no reason for not carrying out the rule.]  
 12112. *Mr. Wade* [The question may be asked for the purpose of explaining how the mine was managed with regard to safety.]  
 12113. *Mr. Wade* [Q Well, take the 4th Right district—if there was gas being given off there, do you think the examination made daily would be sufficient to detect it?—[interrupted]  
 12114. *Mr. Leight* [I object, unless the witness sees it.]  
 12115. *Mr. Wade* [He did not see it.]  
 12116. *Mr. Wade* [The question may be put in the form—was an examination made in a particular way.]  
 12117. *Mr. Wade* [Q In regard to the examination, you are made by the day deputy, if gas had been given off in those waste adjoining the working place in the 4th Right, do you think that that examination would have detected it? A It would have been as effective then as it would at night.]  
 12118. *Q* You have an escape channel. You have examination made daily—seven in the week instead of one, as under the Rule? A There would be two daily.  
 12119. *Q* You said that you did not make the traveling roads in No. 1; were you going to give any reason why you did not make them? A In No. 1.  
 12120. *Q* You said that you watered them in the shaft district, but not in No. 1. Was it because of anything? A Because they did not require watering—most of the traveling roads were wet.  
 12121. *Q* You made an examination of the pillars in the old No. 4 Right? A Yes.  
 12122. *Q* That was in the shaft district? A Yes.  
 12123. *Q* You say you took a safety lamp there? A No, we were going along the air course.  
 12124. *Q* Have you known, since the first fall, any refusal to escape before the second fall took place? A Yes.



Witness—C. Smith, 2 March, 1908

- 22726 Q How long? A It depends upon the thickness of the first fall. If the first fall is between 4 or 5 feet thick, it is some time before the second fall takes place.
- 22727 Q What do you mean by some time? A A month or so more.
- 22728 Q What is the usual width of the first fall? A From 4 feet to 3 or 2 feet.
- 22729 Q Would it fall suddenly or in pieces? A It is a flat fall—about a foot thick—have seen it come down in one block, because there would be a parting in it. It would break when it fell.
- 22730 Q That was when you got a parting? A Yes. If it were 3 feet thick it would not fall as clean as when it was a foot or 15 inches thick.
- 22731 Q Mr. Wade? Q Generally speaking, the tendency was for it to come down in one piece? A Yes; but if it were a thick fall it would be more irregular.
- 22732 Q When you say that it fell in one piece, are you only referring to falls of a foot thick? A Yes, the thicker the fall the more irregularly it would fall.

Re-examined by Mr. Bruce Smith—

- 22733 Q What were you referring to when you told Mr. Loughlin that Mr. Atkinson examined to the highest part of the mine? A To when he was going down with Mr. Brown.
- 22734 Q What do you call the highest part? A No 1 heading.
- 22735 Q The old chamber there? A Yes.
- 22736 Q What did you give your answer as an explanation of—the fact that you had not been found there? A I had been asked if I carried a safety-lamp to make examinations for gas, and did I find it there?
- 22737 Q What was your answer to show? A I was asked did I find it in any of these places. I said that Mr. Atkinson did not find it.
- 22738 Q Why did you mention it? Do you mean that he had examined the highest places without finding gas. Are you not aware that he found hundreds of feet after the explosion? A No.
- 22739 Q You do not know that? A No.
- 22740 Q You told Mr. Wade just now, when he asked if some time elapsed between the first and second falls—you said "Yes, when the first fall was only a foot? A No, when the first fall was rather heavy, falls—you said "Yes, when the first fall was only a foot—what is your experience of the length of time between the first and second falls? A Three or four days.
- 22741 Q Would that apply only to a fall of 5 feet and a half? A Yes.
- 22742 Q From the same level is there a cut-through into a heading through a pillar of coal you tell? A Yes.
- 22743 Q It is on top of the 4th level; open road, and there is a cut-through from the main heading to the first level on the left. What was the width of it? A The width is about 6 or 7 feet.
- 22744 Q Was there any door in that cut-through between the main level and the level? A There was a stopping there, with a pipe through it.
- 22745 Q Could any air go through that pipe? A What would go through a 4-inch pipe along with the water.

Examined by Mr. Robertson—

- 22746 Q How many months would it take for a fall in that 14 Right. Would it take a minute, or half a minute? A You know as much about the law of falling bodies as I do.
- 22747 Q I am asking you about a falling body in a mine. You have millions of feet? A Do you mean from the time the roof starts until it breaks? A Yes.
- 22748 Q Yes? A A light fall or a heavy one.
- 22749 Q A light fall? A In a light fall the roof would drop almost instantly—is half a minute.
- 22750 Q With a heavy fall? A It would work, and break away more slowly.
- 22751 Q How long would it take—I am not trying you down to a second? A I have seen a roof start and go the length of a pillar in two or three minutes.
- 22752 Q Do you think it would come in two seconds? A No, only over a small area. If it was over a large area, and if it had been working for some considerable time, it would fall instantly at the last. With a light fall, when the roof comes away about a foot, there is only a foot of resistance to break, and once it gets away it falls like that. [Witness made a movement with his hand and brought it down quickly on the desk.] If the fall is 5 or 6 feet thick, the roof comes to break and crumble, and pieces start to tumble away, and it may take two minutes for a pillar length to fall. After that the rate would increase ten times, and the roof would keep working the whole of the time, and then it breaks away almost instantly.
- 22753 Q What is the time to give by a fairly big fall? A It might come down in a minute or less than that. If it was on the point of falling before it might come down in two or three seconds.
- 22754 Q Would you care to work in the Mount Kemble mine with naked lights on view of the explosion? A I do not know. I have never been there to see whether, since the explosion, there was gas again. I was that the Chief Inspector has found it, and thought it was with a hydrogen flame, but you I am told he has found hundreds of cubic feet with the safety-lamp.
- 22755 Q Do you doubt that there was an explosion? A No, the evidence is too strong that there was one.
- 22756 Q Would you care to work in Kemble Mine with a naked light? A Well, I do not see that there would be any great danger provided there was plenty of air.
- 22757 Q You think you could get plenty of air? A There is usually plenty of air there.
- 22758 Q Do you think it would be want to increase the ventilation there? A If there were gas, it would drive it away. If you cut off the ventilation at the Mainpitts when you would have a high percentage of gas.
- 22759 Q I think it that before working there with a naked light you would require the ventilation to be improved? A I would not say that. I believe there is sufficient air to dilute it. I have more seen the mine since. When I was there I thought it one of the worst mines that I had ever seen in my life.
- 22760 Q What other mines have you been in? A Kinnaird, the Co. extensive, the Blackton, the Hutton, the Corrie, and the Mainpitts-Monkton Mines.
- 22761 Q Did you find gas in Blackton? A No.
- 22762 Q Did you find it in any of the other mines? A I found it in the Mainpitts years ago.
- 22763 Q Mr. James Smith? Q Did you report it? A One was reported.



21765. Mr. Roberts: [Q] You said that one of the back headings was inspected every morning, although standing idle? A Yes.
21766. [Q] Do you know whether that was the practice, to examine standing places? A I believe we did examine places, even if they were not working.
21767. [Q] There is evidence that these places were not examined? A I have examined them myself.
21768. [Q] I mean by the deputies, in the regular course of their examination? A I believe they were examined.
21769. [Q] If the deputies state that they were not examined? A The deputies did not state they were not examined.
21770. Mr. Wade: [Q] Was not that Morrison? A Yes.
21771. Mr. Roberts: [Q] Yes.
21772. Mr. Wade: [Q] He only came in after Mr. Lenth left. He was a deputy for six weeks.
21773. Mr. Roberts: [Q] What was the condition of the outlet from the 6th Right place—was it deep? A Yes, very muddy.
21774. [Q] Shallow? A Shallow.
21775. [Q] Would there be any dust there? A No, I do not suppose there would be.

Examined by Mr. Ritchie—

21776. [Q] I suppose you are conversant with the Special Rules? A Yes.
21777. [Q] Do you know that it was part of your duty to instruct those under you? A Yes.
21778. [Q] Did you instruct the deputies with regard to Special Rule 10, as to the examination of work workings? A Yes, they were there when the discussion was on.
21779. [Q] Did you give them instructions as to their duty? A They are present when the discussion took place with the Manager.
21780. [Q] Did it take place when you first took up your position? A Directly afterwards.
21781. [Q] Was a deputy present when you found black-damp? A Yes, I believe there was.
21782. [Q] Do I understand you to say that persons are not compelled to report black-damp? A I did not say that as a person was to report it.
21783. [Q] Did you ever hear of the deputies reporting it black-damp? A No, but I have heard of its being there.
21784. [Q] Was it known that black-damp had been there previously? A I know of it particularly in the Red Right.
21785. [Q] Have you seen any report that it was there? A No.
21786. [Q] Was it not wrong that it was not reported? A It was not in a dangerous condition.
21787. [Q] Do you know what the General Rule says nothing about a dangerous condition—it speaks of persons or inflammable gas, if any is found. There is no qualification whatever? A I read that the Special Rule well on. I do not mean the General Rule under the Act.
21788. [Q] You know the Special Rules must be in accordance with the General Rules? A We know they should be.
21789. [Q] You were not compelled to see or report as to the finding of black-damp, although you knew it was there? A I found it once.
21790. [Q] You heard of its being there? A I heard of its being there, but that was in the old workings.
21791. [Q] It does not make any difference where it is found. Do you know that there was possibility of its coming out and killing a number of men. Is that the way you carry out your duties when you are on duty? A Yes.
21792. [Q] Do you allow them to be approved? A No.
21793. [Q] Do you know where Special Rules carried out now? A I would have had them carried out before, but I was not allowed.
21794. Mr. Wade: [Q] Do you know of this Special Rule relating to the under-usage—

It shall be that the air passages, the entries, and shoppings are in good repair and that an adequate amount of ventilation is constantly supplied, and, should it be ascertained that any discharge or accumulation of inflammable or other noxious gas has taken place in any part of the mine to a dangerous extent, he or his subordinate officers shall see that the workers and horses be withdrawn from such place.

Is not that the Rule you refer to? A Yes.

21795. [Q] The inspection under General Rule 4 would be made by the deputies? A Yes.

[The examination of the witness was concluded.]

21796. Mr. Bruce Smith: [Q] Mr. Bower lately produced a letter, purporting to be a certain matter referring to dangerous things which he found within the South Wallend Colliery, and he produced a letter which he received from Mr. Atkinson. This is the original letter which was sent to Mr. Atkinson. In the check inspectors' book Mr. Bower did not refer to anything that was dangerous; but in the letter he looks upon certain things as being dangerous. I beg to hand the letter to the Commission.
21797. Mr. Ritchie: [Q] This appears to have been a private letter.
21798. Mr. Atkinson: [Q] No, it was an official letter.
21799. Mr. Bower: [Q] Mr. Bower treated it as an official letter and referred to it.
21800. Mr. Bower: [Q] Mr. Bower seemed to be in doubt whether it was his duty to mention the matter in the report. Mr. Atkinson thought that it might be in the report. I do not see that the letter reflects upon anybody. Mr. Bower afterwards said that Mr. Atkinson's letter was a sort of snarl, but it was not so at all.
21801. Mr. Ritchie: [Q] Mr. Bower explained that, if the matter was put in the report by the check-inspectors, it might be bad for his company, who was a working under there, and might be made to suffer.
21802. Mr. Hanson directed that the letter should form part of a persons' exhibit on the same matter, and it was ordered that it should be marked part of Exhibit No. 45.

[The Commission at 4.30 p.m., adjourned until 10 o'clock the following morning.]



WEDNESDAY, 4 MARCH, 1885, 10 a.m.

[The Commission met at the Supreme Court, King Street, Sydney.]

[Present—

C. B. H. MURRAY, Esq., D.C.J. (PRESIDENT)]

D. A. W. DOWDSON, Esq., COMMISSIONER. B. RITCHIE, Esq., COMMISSIONER.

Mr. Bruce Smith, Barrister-at-Law, instructed by Mr. Wood, Crown Solicitor's Office, appeared on behalf of the Crown.

Mr. A. A. Ashmore, Chief Inspector of Coal mines, attended Mr. Bruce Smith.

Mr. A. A. Lynght, Solicitor, appeared on behalf of—

- (a) the representatives of deceased miners, widows, &c., (persons of the explosion);
- (b) the employees of the Mount Kembla Colliery (miners, workmen, &c.); and
- (c) the Hibernia Colliery Employees' Association (the Southern Miners' Union).

Mr. U. G. Wade, Barrister-at-Law, instructed by Messrs. Curran and Barry, Solicitors, was present on behalf of the Mount Kembla Coal and Oil Company (Proprietors of the Mount Kembla Mine).

[Mr. J. Garbett, Secretary to the Commission, was present to take shorthand notes of the evidence and proceedings.]

Mr. J. C. JOHNSON was sworn, and examined, as under—

Examination is chief by Mr. Wade—

- 21803 Q What is your name? A Jacob Charles Jones.
- 21804 Q You are at present Manager of Mount Kembla Colliery? A Yes.
- 21805 Q Is the Hibernia district? A Yes.
- 21806 Q How long have you been Manager there? A About eighteen months or thereabouts.
- 21807 Q Had you been Manager elsewhere before that? A Yes. I was Manager eleven years at South Bull, and five years at North Bull. I was also Manager in South Wales for eighteen months.
- 21808 Mr. Wade? Q Is that old South Wales? A Yes. Then I was Assistant Manager at Llanidloes Colliery for about seven years.
- 21809 Mr. Wade? Q That is in New South Wales? A Yes in New South Wales.
- 21810 Q What is your total experience of mining? A Thirty-two or thirty-three years.
- 21811 Q Did you know Mount Kembla Mine? A Yes, very well.
- 21812 Q Before the 31st of July last? A Yes, I have known it for eighteen years.
- 21813 Q Did you know them, in the mine itself? A Yes, intimately.
- 21814 Q And you an opportunity of seeing the general method of working? A Yes.
- 21815 Q And the equipment of the mine? A Yes, that was my principal reason for going to see it.
- 21816 Q Do you remember the occasion of an inquiry to a man named Brewster? A Yes.
- 21817 Q A little over two years ago? A Yes, it must be two years ago, the man lost his leg.
- 21818 Q That took place in one of the pillars in the old Right? A Yes, I remember that.
- 21819 Q Yes, went into that part of the mine specially in connection with that accident? A Yes.
- 21820 Q What is the opinion you formed as to the general safety, or as to the management, of Mount Kembla? A I came to the conclusion that it was managed as well as any other mine that I know of, in every respect, it was well equipped, they used every care, as far as I could ascertain, for the safety of the men, and the ventilation was good—as my time, at all events.
- 21821 Q Did you have any knowledge of the giving off gas? A No. Only on one occasion do I remember anything about gas in Kembla, and that was when they struck some old workings about ten years ago.
- 21822 Mr. Wade? Q That was Gallagher's case? A I do not know the name, but I know that they struck two or three old workings, and a man went in with his light, and it lit the gas.
- 21823 Mr. Wade? Q That was Gallagher's case? A I do not know, I do not remember the name.
- 21824 Q Now, with regard to dust in the mine, or the disposition of the mine, what opinion did you form about that? A It was a mine that would not be considered to be a dry and dusty mine—by no means, far from it. There are plenty of mines I know that are much worse than that.
- 21825 Q You were managing the existing party after the disaster on the 31st of July? A Yes. I did not go to manage the first lot, but I came there and met the late Mr. MacCabe outside, and he asked me to stay outside and prevent the men going in while he went in.
- 21826 Q You went in shortly afterwards? A Yes, about 5 o'clock.
- 21827 Q And you were there on a number of occasions afterwards? A Yes.
- 21828 Q Did you make any special examinations on any days? A Yes, on the 6th of August, I think, and on the 11th of August, we made two special inspections of the mine.
- 21829 Q Putting on one side the occurrence at Mount Kembla, had you had any experience of an explosion in a mine, either of gas or coal dust, or both? A I have been brought up in granite mines, and I have seen one or two slight explosions, and I was at Bulla explosion in 1867.
- 21830 Q What was the nature of the explosion at Bulla? A There was no doubt it was a gas explosion; and it gave great indications of heat, and burnt the men.—[interposed]
- 21831 Q What a mistake—was there anything else besides gas? Did coal dust play any part in it? A Oh, undoubtedly, and dust was a very important after effect. It was a very dirty part of the mine, too.
- 21832 Q You were in the mine? A In Bulla, yes.
- 21833 Q Did you see any collections of flame, or of an explosion? A Yes, in the No. 1 Right, they called it, I think, in every hole you could see indications of people burnt, charred, and also the rib ends were charred—you could see a lot of coke, distilled coke.
- 21834 Mr. Lynght? Might I take two questions at this stage? First, inasmuch as the report of the Bulla Commission is an opinion, you have the matter there at first hand, so to speak, the conditions that were seen there, and it is a pity to offend the depositions with this evidence.



22532 *Mr. Moore* | I take it that Mr. Wade is only going to get it shortly. It is much easier to compare his evidence at the Commission, as to the result of the explosion at Bull's, with the results of the Keweenaw explosion, than it is to compare his evidence on that Commission.

22534 *Mr. Wade* | Q What did you say? A The shivered timber and corks. There was a great force, of course. I remember one saw where, I think, one horse was blown through a brick stopping and into the mine from the main whistling road, the main intake; drove more than 50 yards, through a brick stopping. That was the greatest effect. Of course a lot of the miners were killed.

22535 *Mr. Moore* | Q The horse really followed the stopping, I suppose? A, I would not like to say which went first; they might have gone together.

22536 *Mr. Wade* | Q Do you mean the stopping was blown down? A The horse was blown 50 yards beyond the stopping, right through.

22537 Q But "blown through a stopping" makes it look as if the solid stopping had been there? A It had been there.

22538 Q You mean the stopping was blown down? A Yes.

22539 Q And the horse was blown through the opening? A Yes; and a lot of men died on the main intake road from the effects of after-damp, and a good many were hurt, near the rest of the explosion, at all events.

22542 Q And do you remember how much of the people was affected by cold then? A Well, some very very much, from top to bottom; some parts of the timber were not so much burnt as that they had dry dust like down on it then and then refused. Some parts of the people would be covered with dust, dirt, and the heat would have burnt the dust into a color. There was a lot of some like that.

22543 Q How thick was this covering? A About one-eighth of an inch, I suppose. You could just scratch it off.

22544 Q And on which side of the people, on outside, or more than one? A Oh, you could find them in all directions in the mine, near the entrance of the mine.

22545 *Mr. Moore* | Q But, as far as the symptoms of force would show the direction, did you find the dust on what you may call the windward side of the people or the lee side of the people, or both? A You would find it mainly surrounding some people, near Miner, especially in the mine. You are there were a lot of people in the headings where the explosion was supposed to have occurred, and there is no doubt the effect would go up and down those holes, so you could actually tell in which direction the force would be.

22546 Q Is any other road both ways, one after the other? A Just so.

22547 *Mr. Wade* | Q You have told us the effect on the wall in the mine and the other side—was there any coal standing in the path of this explosion? A Yes. If I remember rightly in the first heading of the mine, some the mineral overhang in the face, I think there was a lot of coal on the floor.

22548 Q But I am speaking of and that was to the tube, for instance? A No; I do not remember that. There had been a shot fired in the face of one of the headings, and the coal had been blown away a good deal, but I do not think there was any chips or lumps of coal there.

22549 Q Speaking generally, how did the condition which you saw at Mount Keweenaw correspond with what you saw at Bull's? A I could not see any comparison at all. You could get into Keweenaw straight away, and men came out after, scores of them, immediately after the thing occurred, but at Bull's there was not one came out—even in the western section of the Bull's mine, which was a mile away from the rest of the explosion, I think they all got killed there.

22550 Q Were there more than one opening in the Bull's mine at that time? A Only a shaft and a tunnel, I think.

22551 Q Practically there was only one? A One main entrance.

22552 Q And there were several in Keweenaw? A Yes, four or five.

22553 Q That might make a difference, as far as Keweenaw is concerned? A Certainly.

22554 *Mr. Moore* | Q If there had been only one opening in Keweenaw, probably very few would have come out of that mine? A I do not know. Bull's was a very extensive mine, and the western section was about a mile away from the rest of the explosion, and they all got suffocated there. I do not think, even if there were there in four entrances out in where the tunnel is now, it would have helped them a bit. If they had tunnels to other parts, other sections of the mine, it might possibly have helped, but if they had had tunnels in the same position as the present tunnel at Bull's it would not have helped them one bit. If I remember rightly, even with the effect of the explosion, it did not do as much damage to the main tunnel as Keweenaw did.

22555 *Mr. Anderson* | Q That is to say, the explosion at Bull's did not wreck the mine so much as that at Keweenaw? A No, it did not. It did not seem to have broken the mine so much. There was one heavy fall, but that was a bad rock.

22556 *Mr. Wade* | Q That was at Bull's? A Yes.

22557 Q Let us come back to Keweenaw for a minute. do you mean that there were more numerous falls at Keweenaw than at Bull's? A Yes, there seemed to me to be tremendous funnels at Keweenaw. I think to knock those ribs about and break such a strong roof to pieces.

22558 Q And what would be the explanation of the falls of roof, do you think? A I think it must have been the force of the wind, in knocking those supports out; and a great concussion must have shaken the strata, and large pieces fell out.

22559 Q And the immediate cause was the destruction of the supports of the roof? A Yes, and the shock, because there were very big distances of the roof unsupported together; it was such a good roof. And the only explanation I can give for this good roof falling was the sudden shock or concussion shaking the strata, and large pieces fell out.

22560 Q Did you trace any canted point in Keweenaw for the indication of force? A Yes, on the 4th Right there is no doubt about that. That is where a great burst came from, and I really believe that that is the first cause of the whole trouble, I tell in that place.

22561 Q A fall in the 4th Right? A The 4th Right.

22562 Q If they were working towards the road pillar in the 4th Right—[interrupted] A The barrier pillar.

22563 Q The pillar that protects No 1 Travelling Road, the one on the eastern side of the Travelling Road? A Yes.



Witness—J. C. Jones, 4 March, 1905.

21864 Q If they were anything all the roof (rest was) in front of it, which and would be likely to give way first when the roof fell? A The roof end—then next to the gird. That would certainly fall first. That would be directly behind from the main fall; probably, and then, with such a roof as that, the roof would hang down towards the gird, and the side rails would break next to the heavier piles, and that would fall down a great way to the side. That is the way I should expect a big fall like that to come down.

21865 Q Could you describe how the roof would present itself, with regard to the south of the 4th Right? A Yes. I know there were piles worked from the roof towards the heavier piles, the roof would probably do you think, if those piles were worked from the roof towards the heavier piles, the roof would probably do it. [Witness shows and this was a small roof break held horizontally to represent the roof.] This is the gird side [one end of roof] and this is the pile side [other end of roof].

21866 Q And where is your splitting? A The splitting is in the side, next to the pile. This [the gird end of the roof] would probably hang down a certain distance [witness illustrated the hanging by lowering the gird end of the roof till it was at an angle of about 20 degrees from the pile end horizontal position]. Then I think the roof would break at the supporting side, the pile side, and it would immediately go down like that, [witness the roof down gradually as the end is front of roof]. This [the gird end of the roof] would be falling backward, practically during that end on the gird side before it fell on the pile side [witness illustrated this by taking the roof in a horizontal position, where the end, and then lowering the gird end of the roof till it reached the end, as he is showing that the roof would have such a curve on the gird side as to be reaching the heavy piles before the rest of the pile side started to subside at all]. And then it would fall like that [witness the roof fall on the side].

21867 Q It would begin to fall on the gird side first? A Yes. It would begin like that and practically nothing [the floor] and then the only support would be the side next to the pile. It would hang until it broke on the pile side, and then it would fall like that.

21868 Mr. Jones? Q By hanging like that, you do not mean as high as that? A No. A roof like that would probably go right to the floor at the distance of the end of that room [roughly between 40 and 45 feet].

21869 Q Before it would break? A Yes. There would be a mass of debris, laminated slabs, and it would break all along. I have seen a roof about making the floor before it broke.

21870 Q Without anything in the nature of a crash? A Yes. A good deal would depend on the nature of the frame.

21871 Q What was the nature of the frame there? A It was a fairly strong truss, and laminated, and was of a sort of light, and very strong. I can give you an instance of a similar roof, almost exactly, in Oak City, where there are about 2000 tons of iron, standing now, without any support of any kind.

21872 Mr. Jones? Q You are referring to the Mount Kenilbe station, now, particularly, when you talk about its hanging like that? A Yes.

21873 Mr. Jones? Q I think when he said "I have seen it hanging early in the ground" he was speaking generally? A Yes, not of Mount Kenilbe.

21874 Mr. Jones? Q You were mistaken to draw the reference from that that at Mount Kenilbe it would fall likewise? A I am trying to explain how I think that fall would take place.

21875 Mr. Jones? Q You think it would sag at the back end? A Yes, sag at the loose end.

21876 Mr. Jones? Q That roof is a laminated truss, Mr. Jones? A Yes, it is.

21877 Q An arched truss, is it not—a truss with a good deal of arching in it? A Yes.

21878 Mr. Jones? Q If it fell in that way, the roof falling, then the frame being the best to come down, that would tend to drive out more as than it is all fall away? A Probably it would. I do not know that it would make much difference. Everything would depend on the time it fell, but I should say that the roof would prevent any sagging into the old roof. It would all have to come out.

21879 Q That is, supposing the roof had fallen close up to where those piles had been worked? A Yes.

21880 Q Then you mean, under those circumstances, the fall of the roof on the gird side would prevent the roof going back? A That is so.

21881 Q Did you see the amount of any curves across at all? A Yes, I saw them on several occasions in different parts of the No. 1 District. There were some at the entrance to the 4th Right, I think. There was a pair across the 4th Right, and a pair across.

21882 Q Did you notice any marks on the side of the No. 1? A Yes, I think there was a pair of curves up against the side opposite the 4th Right.

21883 Q In the No. 1 mine road? A Yes, in No. 1 mine. There had evidently been a close in the cut through between the two headings, and the brackets had been set to pieces and separated.

21884 Q Do you think it would require force, or a great mass, to have driven that across to the side? A Oh no, I do not think it would take very great force, not in pounds per square inch. There is no doubt it has been driven with considerable force, because it struck it into the corners of the road.

21885 Q Do you remember seeing a pair of curves in a creek on the side of the No. 1? A Yes, I did see it. It did not require much force to do that, although evidently it had been driven with immense force up there, the actual fact of the masses being put there did not show very much force. The actual fact of the masses being put there did not necessarily indicate very great force, because you could put it in with your finger in a broken ribbed, you know. At the same time there may be a tremendous force coming out of that, but the simple fact of the masses being in the side would not be a sufficient indication of that force.

21886 Q You would not draw that inference from the fact of the masses only being driven in the side, but from that fact alone? A No.

21887 Q Do you know where the 4th Left is? A Yes, side of the 4th Right.

21888 Q Two hundred yards from the 4th Right is the main road? A Yes.

21889 Q Supposing the fall in the 4th Right had occurred there, and driven that out by the 4th Right road, would that go up to the 4th Right side, and supposing there was a solid rib, Moore's's side, somewhere about the 4th Left, 200 yards away, do you think that it would be possible for Moore's's side to ignore that you under those conditions? A I do not think so. I have an idea that the curves would enter in the opposite direction, really.

21890 Q What do you mean? A I believe that, with the great force coming up from the 4th Right, it would make a kind of curve from the straight No. 1 center, necessarily, at all angles, and probably put the lights out there that way.

21891 Mr. Jones? Q From the acute angle being in the side of the No. 1? A Yes.

21892



- 22592 Q You do not think it would split suddenly? A I do not think it would; not at that instant.
- 22593 Q Not instantaneously? A No.
- 22594 Mr. Roberts: Q You mean as the principle of the dynamite? A Yes, as the principle of a railway train, if you like.
- 22595 Mr. Cross: Direct? Q Why should it prefer to turn out? A Because the angle is that way.
- 22596 Mr. Roberts: Q Do you think the angle is sufficient to cause that direction? A I do.
- 22597 Q For all practical purposes it is at right angles? A It is a long way off right angles. I suppose that would be about 135 degrees.
- 22598 Mr. Cross: Q Do you see that the enormous instantaneous compression of the ignited air would, in point of fact, instead of causing an instantaneous out-draught, probably rather cause an instantaneous outflow in all directions? A I do not see it that way. I think it is quite the opposite. The more force, the more pressure you have there, the more suction you would create, because it is a pressure as it were. If you got it very rapidly it would create a suction, I am sure.
- 22599 Mr. Roberts: Q And when the blast had ceased there would be a return? A Yes.
- 22600 Q And whatever came out would be sucked in to the flat left? A It would—what came out of the blast.
- 22601 Q Yes? A Oh no, that would not be sucked in.
- 22602 Q But when it had expanded its force? A When it did expand its force—[Interupted].
- 22603 Q You know from your own experience that, when the explosion had ceased, the air returned to its natural course? A Quite so, but I would not like to say when that force had expanded itself. The indications show that it did not expand itself till it got outside. How it continued I would not like to say, but there is no doubt about the fact that there was a force, and a force that continued right out to the tunnel mouth.
- 22604 Q Do you mean to say that this tremendous blast continued—[Interupted]? A Right out to the tunnel mouth.
- 22605 Q Continued with the same force? A And probably with increased force. I would not like to say that, but there is evidence to show that there was great force there.
- 22606 Q There are a number of openings off the No. 1 main road; do not you think the force would dissipate itself at every opening it came to? A No. There is nothing to show that, and I do not believe it. If you have a pipe at a ninety degree like that, and a number of branches on it, and you allow the water to run down that, none of the water would go down the branches.
- 22607 Mr. Cross: Q You have to be very careful in comparing the action of a gas and the action of a liquid—the action of air and the action of water? A They have a good many of the same principles.
- 22608 Q And a good many different ones. A Liquid is, in all respects and purposes, heavier, but gas is, to a very great extent, elastic. I am speaking of the air in a gas? A Yes.
- 22609 Mr. Roberts: Q Do you think the force went right out to the tunnel mouth without being dissipated in any way? A Supporting one-quarter of an acre of that gas left. I was watching the opening at 10 ft x 5 ft. If the air came out of that opening, the rate of speed would be 160 miles per hour.
- 22610 Q How do you know what rate it would be? A I am only assuming that a quarter of an acre fell 6 feet in one second. I am only assuming that, to show the speed. I am quite willing to admit that that speed would expand itself long before it would get to the tunnel mouth, if it had not some other force to follow it on. How that force acted is a mystery. Probably it would come from a dust explosion, but I cannot explain how it got sprung.
- 22611 Q That is a different story, a moment ago you said it would continue undiminished to the tunnel mouth? A I did not. I said that the evidence went to show that there was force right out to the tunnel mouth, but I did not say that this force itself would continue. I said that I do not believe that air travelling at a rapid speed would dissipate through these cut-throats, as you think, if it is going very rapidly. The tendency would be to go straight out. That is my second opinion.
- 22612 Mr. Atiles: Q Do you think it would burst in the same way as a bullet or a bolt that you might shoot by some force? A Yes, but if you had branches from the barrel of a gun, and you put a propellant into it, you would not expect pieces of the propellant to come out of the branches, would you?
- 22613 Q But you would not expect that mass of air to be a bullet in a gun? A I do not know, it is more as a propellant when it burns like a solid, and that kind of thing.
- 22614 Q (At Atiles) You know the bullet would not expand and stop at all different openings, in any way, and probably would? A Oh no, I would not like to undertake to explain how the power continued right out from that volume of air.
- 22615 Mr. Atiles: Q Have you ever seen the gas arrangements in a blast furnace? A I have no doubt I have.
- 22616 Q Do you know the gas pipes that lead the gas away from the blast furnaces are, none of them, about 7 feet in diameter and 1 mile long? A Yes.
- 22617 Q Do you know that they were provided with explosion doors about every 10 feet or so? A That is so.
- 22618 Q When an explosion occurred, according to your theory, it would go right forward and refuse to reflect itself at the explosion door? A Oh no. I did not say "explosion doors"; I did not speak of an explosion at the time. I spoke of a volume of air—I think it is 24,000 cubic feet, or something like that—that is almost in one ball, and it is forced through this narrow place.
- 22619 Q But what is the difference whether it is a force created by the explosion of gas, or an immense force created by a ball of air to itself of the gas and the velocity of the air you just described? A No, no doubt is. An explosion comes in that way, the force gathers itself all around in a ball, and it has equal force all round. I have no doubt—no explosion, but a volume of air driven in one direction has not yet equal force all round. You say as well, if the volume of air can dissipate itself so easily as you think, that it would have a backward pressure as well as forward. It would come backwards also, actually.
- 22620 Mr. Atiles: Q Would it not come backwards afterwards? A No.
- 22621 Q Immediately after the fall took place would it not go backwards? A The air?
- 22622 Q Yes? A No, certainly not.
- 22623 Q Would not go back? A No.



Witness—J. G. Jones, 1 March, 1935

- 22104 Q What would fill up the vacuum created by the fall? A It would fill the vacuum, if you like; but that would not generate the force.
- 22105 Q I was not speaking of the force; I was speaking of the air going back into
- 22106 Mr Jones Q Do you not see that the forward force is only momentum, and the momentum varies directly as the changing weight of the body moving forward, and the absolute weight of the air is a very small quantity? (Witness did not answer.)
- 22107 Mr Jones Q Anyway, I understand from you, Mr Jones, that you did not contend that the force caused air to be drawn into the tunnel mouth, it must have had a fresh source of energy from some place?
- 22108 A Certainly. The volume of air would not be large enough to extend that distance; it would come back to the natural pressure space.
- 22109 Mr Wade Q If the air were drawn out of the 4th Right, and rushed past the back heading of No. 1, do you think that would cause any action in No. 1 travelling road, the back heading? A Yes, probably; I should think it would. It must have caused a current there. There would be a small current at the time, and some few thousand cubic feet would be going up that travelling road; would they not?
- 22110 Q Going upwards—not up? A Going upwards, yes, and that force would go a great way.
- 22111 Q Leaving the question of vacuum on one side, with regard to the back heading at present, supposing there was no oxygen and water component, and a weak escape towards the 4th Left, do you think that nitrogen light would have been able to flow until the mixture of gas got to 67? A No. I repeat, we know it could, possibly.
- 22112 Q But, supposing there was a body of ignitable gas flowing from the 4th Left to the 4th Right, and then it, without an actual explosion, would you expect to find any signs or indications of flame or heat in that passage afterwards? A I should say yes, and very strong indications should be shown there.
- 22113 Q And if the blast, or rush of air that came out of the 4th Right, stirred up coal dust and drove it along to the 4th Left with the mixture of gas, and the igniting took place at the 4th Left, would you expect some signs of flame and energy? A I should think you would, with coal dust and gas. It would have made considerably more damage than you could see there.
- 22114 Q And, supposing there was no actual explosion, would you expect to find a big indication of flame; supposing the flame was not sufficient to cause an actual explosion—say something less than 5 or 6 per cent—then, if you got a light of the gas, and the air, or dust, would you expect a big indication of flame? A Oh, certainly; you would, the same in other cases; it may be smaller, having less gas in it.
- 22115 Q Supposing then flame came back to the 4th Right junction with the main road, and then a real explosion took place there, some travelling coils and some travelling coils? A It would show different indications from those shown there.
- 22116 Q What would you expect to find? A There would be merely some indication of heat and flame; and more damage at the exit of the explosion. There is practically no damage done there at all.
- 22117 Mr Jones Q I do not quite understand that; you say there was practically no damage at the exit of the explosion? A Mr Wade accused an explosion at the 4th Right.
- 22118 Mr Wade Q I said nothing of the 4th Right. I said, supposing the 4th Right, because the center of a substantial explosion, would you expect to find indications of heat on the surface side. You said you expected to find much more damage? A Oh, very much more in the close vicinity of the end of the explosion, I think.
- 22119 Q Would you expect anything else? A I would expect to have indication of heat and flame.
- 22120 Q Do you remember a heap of coal just by the 4th Left? A Yes, that is one of the things I could not get anybody to explain—how it came there.
- 22121 Q Did you see any signs of that coal being disturbed? A No; I did not see any indication of heat down there at all. Those pieces of leather cloth—we found two or three pieces close by—these was not the slightest indication of heat amongst them.
- 22122 Q Going further out from the 4th Right towards the tunnel mouth, did you travel all that road? A The No. 11.
- 22123 Q Yes? A No. I do not think I travelled the main tunnel out all the way.
- 22124 Q How far did you go? A I went up beyond the entrance on the No. 1 main road. I went beyond that a few chains.
- 22125 Q A few chains beyond that? A Yes.
- 22126 Q That is further out? A Yes, further out.
- 22127 Q Do you remember noticing the beams or bars? A Yes. There were three or four right at the entrance.
- 22128 Q Bent upwards? A Yes, bent upwards.
- 22129 Q Did you see any signs of colored dust deposited on them on either side? A No; there were patches of black dust on some of them, but not the slightest bit of white dust or heat. It was quite soft and heavy.
- 22130 Q Coming back to the question of a vacuum in the 4th Right, supposing the road in the 4th Right fell heavily, would that tend to fill up more space than it had been in before? A I do not understand you.
- 22131 Q Does that coal, after it has fallen, occupy a bigger space on the floor than it did in the roof? A Yes, certainly. The more compact it fell the less space it would occupy.
- 22132 Q Suppose it did fall heavily, and filled up close to the edge of the gash, would that have any tendency at all to the tendency of the vacuum? A I do not think so, if I understand the question right.
- 22133 Q Would the air have the same chance of getting in to fill this place up? A Oh, no. I think the opening was perfectly choked up when I saw it.
- 22134 Mr Jones Jones Q Yes, you are speaking of the 4th Right? A Yes.
- 22135 Mr Jones Q Did you notice any timber or props on the 4th Right road? A Yes, there were a good many props there. I think they must have covered a bit of the prop-ends—you know they do generally, when they are abandoned places. I think they must have crossed them out from the 4th Right, and put them into this narrow place, and left them there. Some of them were knocked about in different directions, and some of them were covered with debris which had come out from the 4th Right; but some of them were bent.
- 22136 Mr Jones Q It did not appear to you that they had been blown out of the 4th Right? A No. In addition to my observation of the place, my previous knowledge of mines would tell me that they got them there in a heap. I have not the slightest doubt but that is what occurred.



22586 Q They were taken out and put them to save them? A To save them, of course, is one of a fall they would stack them up in a heap by on one side of the road, and the force of the fall would destroy them. There were some leaning that way and some leaning that way (pointing), and the force of some of them were buried in debris, a foot or 15 inches of dirt, and there was water lying in that place.

22587 Mr. Welsh Q And you are saying there that you would say was an indication of three prop logs? A Certainly not. I cannot say that I saw any indication of an object from

22588 Mr. Edgewood Q Did not you see any props in the 415 Right with three bottom beams in the stack, and their heads leaning toward? A I saw them almost in all directions, but I would not make it as an indication of where the force went. I would not depend on these props as any account in indicating the direction of force.

22589 Q Did not you see four or five slanting, with their heads knocked away from the roof, and their bottom beams in stack—did you not, would not you consider that an indication of the direction of the force? A You do not say there were props supporting the roof there?

22590 Q Supposing you saw some props with their bottom beams in stack, and their heads leaning toward, would not you say that was an indication of force? A Certainly not.

22591 Q Why not? A It may be an indication of force, but certainly not an indication of the direction of the force. A very small force would blow them like that, but if it is more a heavy force it would blow them all to pieces.

22592 Q If the bottom half was buried in stack originally? A There could not be stack there when that was a whirling roof.

22593 Q On the side of the roof? A There was no stack there; and there were no props supporting the roof there.

22594 Q If you did not see stack there, you did not see all that ought to be seen? A I saw stack, from a foot to 16 inches deep. I was up nearly to my knees in mud and stack.

22595 Q On the right-hand side to you go up, there was a heap of stack that had been thrown there, and props that had been there supporting the roof. The stack was thrown all round about the props? A If you think that that would be an indication of the pressure or the force, or the direction of the force, then it would be a very poor force that would come out.

22596 Q Why? A You could knock a prop down with your finger almost, and what force would it require to do that, I would like to know? If you took the prop as an indication of force, then there would be no force at all, because you could knock a prop down with your finger.

22597 Q Do you think you could knock down with your finger a prop buried half way up in stack? Do not you know that the timber drawers have great difficulty in drawing these props? If you saw three props buried half way up in stack with their heads leaning edgewise, would not that be an indication of the direction of the force? A No, I do not think so.

22598 Q Did you see a stack up there near the edge of the fall? A I cannot say that I saw a stack. I have heard some people speak of it, but I never saw it.

22599 Q Did you see a large stone about 6 feet long about 5 yards in from the back heading? A There was one right at the mouth.

22600 Q About 5 yards in, or 6 yards? A I do not remember that. There was one right at the mouth, a big slab.

22601 Q When were you there? A I was there the same day as you were there.

22602 Q And did I not point out these things to you? A I do not remember. I do not think I was with you there on the same day.

22603 Q You said you were with me? A No, but I was there the same day. I saw you in the mine; but I do not think we went together.

22604 Q You were not with me in the 415 Right? A No, I do not remember it.

22605 Mr. Edgewood Q You do not mean to say, Mr. Jones, that you can usually knock props out with your hands? A No, I am simply referring to the props standing in stack without being held fast at the roof. If a crew is standing on Mr. Edgewood says it is, then very little force would knock them down.

22606 Q I think Mr. Edgewood meant that they were supporting the roof.

22607 Mr. Edgewood Q They had been supporting the roof. They were put in to support the roof. A. Thus in my idea, if a prop is not there and had been wedged in with a bit, as it is usual custom, it would make a little force to knock that down; and the force would knock the prop down there; it would not keep it standing up.

22608 Q That would be so, if it had been left without anything round about it to hold it up, but if it was supported half way up by stack, would not you expect it to remain in its place? A You are presupposing that the stack was there before the force came.

22609 Q I am not presupposing anything. I am telling you what was there? A You are presupposing that the stack was there round the prop before the force came.

22610 Q Yes, of course? A But you do not say that stack is put round props that way on a whirling roof?

22611 Q It was on the side, in off the roof? A I cannot understand it at all. What would they want a prop in a place like that for, against the side?

22612 Q I am not saying it was against the side? A If it was an against the side, the stack would be on the roof in a 10-foot place.

22613 Mr. Edgewood Q Simply on your own position, you have seen thousands of props in 10-foot places? A Yes; but you do not follow me. If that prop was of any value, it would not be on the side.

22614 Q If I do not think it was said that it was on the side? A If it was not on the side, how could the stack be around it, because, on a 10-foot place, it would be on the side.

22615 Q In a 10-foot place the props would be placed probably 16 inches from the roof, in order to allow the stacks to pass, and if there were sufficient stack made to have to cut it out, they would have to cut the stack around the prop? A I would like you to show me how you could put 1 foot or 2 feet of stack around the prop without its going on the roof in an 18-inch place.

22616 Q Have not you seen stack built up against the roof? A Certainly I have.

22617 Q You never do not take very much to hold it up for some considerable distance?

22618 Mr. Edgewood Q Did you observe a stack on the right-hand side? A I do not remember that.

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Reverend J. C. Jones, 1 March, 1905.

22995. Q And was not there a space between that shock and the rib side? A Yes, you may have been in there after I was in there. When we were in there, we could scarcely hold the light down at all. I went up to the left as much as ever I could with the light, but there was so much black damp that as soon as we got the light under the floor it went out.

22996. Q You are not in a position to contradict what I say? A No; but if the props were that way, the floor would break there down, if it were a great floor.

22997. Q Never mind the nature of the floor—would not these props indicate something? A It would indicate the way they would fall, perhaps. I am simply giving you my opinion as truly as I can. Looking at it from a practical point of view of what I would do, I would put this heap of props there—

[Interposed]

22998. Q I am not referring to the heap of props at all—I am referring to the props that were put up there to support the roof, and that had been surrounded with shock.

22999. Mr. Fisher. Q I suppose you have in your position now props very close to the rib side? A Oh, yes, especially where there is a cap over, or a bar. Then the props are on the rib side.

23000. Mr. Wade. Q Were there other props in this rib? Right—other props standing supporting the roof? A No, I do not remember seeing props standing supporting the roof anywhere.

23001. Mr. Anderson. Q You could not get in the black damp? A I could not because it is down to the floor anywhere. I had to keep my light up to get in to the fall.

23002. Mr. Wade. Q You say that, if the floor went on undisturbed in the tunnel south, you think there must have been some other element? A Yes, I think there would be another element coming in elsewhere.

23003. Mr. Bruce Smith. Q You mean there was another element coming this direction besides the force of the air?

23004. Mr. Wade. Q You mean another element besides the air? A Yes.

23005. Q Can you see any way of accounting for that? A I really cannot explain it to my own satisfaction, but I think that the coal dust that was raised would be pretty well heated with the compressed air coming out of the rib right, and, by some means, either by the force [blast?] of the air, or by the air itself, or something of that kind, striking it, it would be ignited.

23006. Mr. Fisher. Q I agree what the gas or the coal dust? A I agree the heated gas, or coal dust. It might be an electric spark. There are some water there, and, though I do not think the voltage was very great, possibly they would get mixed up together and cause a short circuit.

23007. Mr. Anderson. Q What would cause the heated coal dust? A The compressed air. There is no doubt the initial temperature would be pretty high there. There is no doubt it would be nearly 100 degrees Fahrenheit.

23008. Q How could it be above the temperature of the strata? A Oh, it is, I can assure you—

[Interposed]

23009. Q If there were no men working there, how could it be above the temperature of the strata? A I could show it to you many degrees above the temperature of the strata in South Fork. Water was lying on the floor—I would not explain it, but it certainly raised the temperature some degrees above the temperature of the mine, and the same thing applies there—in Mount Kemble 32 was good, where no carbon and gas is, there seems to be a rise in the temperature.

23010. Mr. Wade. Q Were there any men working in the place you speak of in South Fork? A No, it was filled up with black damp.

23011. Q Do you know whether coal dust would undergo distillation at a point lower than the igniting point? A I am not certain whether the other day—I forget what it is now—also stated that coal dust distilled at about 250 degrees temperature, and the igniting point is 350 degrees, I think.

23012. Q The igniting point is 250 degrees? A Yes, 350 degrees. It is in one of the reports of one of the Inspectors at Home.

23013. Q So, if you had a temperature of 300 degrees, you might get gas given off? A Yes.

23014. Q Mr. Anderson. Q Could you get that authority? A I will produce the paper for you. It is in the Colliery Guardian. It is in the evidence of one of the Inspectors before the Commission on Coal-dust.

23015. Mr. Bruce Smith. Q How long ago? A I think it was in 1890 or 1891.

23016. Q Do you mean the Green House at which Mr. Chamberlain was chairman? A I do not know.

23017. Q Do you mean a Colliery Commission? A No, the English one. I think it was Mr. Bates who was giving evidence as to the experiments they had made in the explosion of coal-dust. Perhaps it was Mr. Hall.

23018. All right, I will produce the paper. It is in the Colliery Guardian, if that will do you?

23019. Mr. Anderson. Q Yes, it will be very interesting? A I have got a note here. That is—Coal-dust begins to distill at temperature of 250 degrees, see Inspector Bates' evidence on Royal Commission on Colliery Explosions, Colliery Guardian, March 24th, 1892.

23020. Mr. Wade. Q Were you aware of any case of a fall of air when a mine was absolutely empty, and sparks being struck by the movement of the roof with the floor, and striking gas? A There was not one that I saw an account of, where no explosion took place when such a shock in the mine, but I really do not remember it now. There was another case that I saw the other day, where an electric spark caused an explosion which killed nine men in the mine, simply by one of the men getting an iron shovel so that it touched the two wires and formed a short circuit.

23021. Q Can you show me whether it is possible as likely, if the suddenness given were held out against them from below on the main road, there would or would not be a spark or sparks? A I should say there would surely be a spark. I have seen sparks often from poles striking each other.

23022. Mr. Anderson. Q Do you think these sparks ignited the coal dust? A I could not say. I am rather in favor of the idea of the day when striking something.

23023. Mr. Fisher. Q If this gas was distilled, and if this spark was struck in that way, do you think the spark would ignite the gas? A I think a good spark would ignite distilled gases, either as electric spark or from sparks struck by steel wheels.

23024. Mr. Anderson. Q Do you think there would ignite coal dust? A Not at ordinary temperatures, or maybe ignite distilled coal dust [you distilled from coal dust?] at 350 degrees temperature.

23025. Mr. Wade. Q I want to ask you some questions about your own mine, Mount Kemble. There was some complaint made by Wyne with regard to the shock temperature reported? A Yes.



23013. Q. In connection with Mount Kears? A. Yes. I was ordered to prepare the book and the reports Mr. Garlick wrote me a letter about it, asking me to prepare the book. If I remember aright Mr. Wyen was then inspector for a couple of years, and he was, in his capacity at Williamsburg, that he had reported something dangerous in Kears Mine, and that report was not sent forward to the Inspector according to Act of Parliament. Of course I was not at Kears at the time myself.

23014. Q. But that is the official book? A. Yes, that is the second report made by Wyen himself in his own handwriting. (The book was handed to Mr. Hardy.)

23015. Witness: I have been reading this report, and I can see nothing that should be reported to the Inspector.

23016. (The Wyen's Book was then put in and marked Exhibit No. 47.)

23017. [Mr. Wade read the two reports.]

23018. Mr. Wade: Q. Is there anything in this second report? A. I do not think so. There was nothing, as all events, to warrant sending a report to the Inspector.

23019. Q. In the second report they say, "We wish to call attention to General Rule 15 of the Coal Mines Act, which provides for two sentences to all engine drivers." Then there is a note by you, "That rule was amended with." That has been complied with since you were there? A. Yes.

23020. Q. And that is the last report? A. That is the last.

23021. Q. In the first report of the 24th and 25th June 1900, they speak about the working places being before in excess of the distance for out-throgs. Were there any regular distances fixed by Act of Parliament, or special rule in 1900? A. No, there was no regular distance.

23022. Q. Was there any Regulation or law at that time to compel you to put in out-throgs at certain distances? A. No.

23023. Q. Do you know anything about this suggestion that the smoke of gunpowder after a loading shot can be 210? A. I think it is a very common occurrence.

23024. Q. What do you attribute it to? A. Well, the smoking gases from the explosion—there is no doubt about that. I have papers here to show.

23025. Q. Smoking gases from the explosion of what? A. Of gunpowder, explosive powder. I have seen it in many cases now myself, and it occurs nearly daily in the mines in the Howarth District. If a man goes in immediately after a shot, if that shot has not scattered the coal away, you can quite see the loaded gases in the currents.

23026. Q. Where the end is hanging still? A. Yes, and you would see a big column like that (reproducing) going right across down to where the shot hole was. And if you go in with a naked light before the loaded gases have cooled you will ignite it then.

23027. Q. Have you any instances of explosion traced to that? A. Yes; I have an instance of an explosion here traced to that exactly, explaining the whole thing. It was in Iowa, where there was a Comstocker appointed to inspect into the disaster.

23028. Q. Have you the report of the accident there, first of all? A. Yes; I have the report of the accident here, and the sketch, and all. (Witness handed a book to Mr. Wade.)

23029. Q. That is a publication called "Miners' Minerals"? Is that a recognized scientific publication? A. Yes; the best published in the world now, I think.

23030. Mr. Wade (reading): "In accordance with a resolution passed by the Legislature, Governor Cassiday, of Iowa, has appointed the following Commission to investigate the causes of explosions in Iowa coal mines":

23031. Mr. Eckstein: What is the date of that?

23032. Mr. Wade: March, 1901. The explosion was in the East Creek Mine, Iowa. And in this publication there is a statement that there was gas in the Iowa coal field. The statement of the mine is this, page 284:

"The Inspector's report has very kindly sent us a sketch, which we reproduce, showing the position of the shot hole in which the shot was fired that caused the explosion. The sketch also shows the position of the shot hole with respect to another shot hole previously drilled. The position of these holes are such that the end of the shot hole was only 10 inches from the hole fired. Mr. Verney says that the shot among the explosion it first hole had been drilled the same (yes, and states that it is his present opinion that the shot hole itself was the cause of allowing the flow of the explosive powder and gases to be driven out upon the end of the shot workings with their rapid descent consequent."

23033. Mr. Eckstein: I do not see anything there about the gas. It was a blow-out shot, as far as I can understand.

23034. Mr. Wade: I am coming to it directly.

Mr. Verney draws attention, as he has often done before, to the fact that before fired the second case always contain a better or lesser amount of moisture, and are dangerous. The reason for this is that the shot hole, as we say, "spings" the hole, or causes no danger in the region of the charge. The escaping of the air in blowing out they give a source of escape of danger even if an escape or accident is produced in the end. A considerable amount of the air, or powdered coal, will be produced in the hole by the first shot. The very reason is the hole is blown out and driven in level. In the end, the diameter of the hole is kept in many cases, as I have seen in working of the hole in the same I bring. Mr. Verney draws attention to the fact that the gases contain necessarily CO<sub>2</sub>, and to some extent sulphuretted hydrogen (H<sub>2</sub>S), produced in the firing of the shot charge, may be blown by the force of the explosion into the lower end of the end of the shot hole, and there remains held rapidly by the blowing of the second charge. During the course of the second shot.

Now, that is the statement of the case, and the Commission gives a special report upon it. In the April number of the same publication, "Miners' Minerals" there is an account from the report of the Commission, on page 287.

The Commission's conclusions regarding the so-called shot explosion in Iowa and elsewhere are briefly as follows:—The explosion of blasting powder (working on only a small amount of lower end of the gases resulting from such explosion about 30 per cent) are recognizable in explosions, in fact, there is danger in allowing these gases to escape into the atmosphere which is heavily charged with dust.

The report states that daily 70 per cent of the shot charges in Iowa mines have been used by shots charged, and that the second shot or by shots whose explosion have not thrown into the mine air in their immediate vicinity through the remaining parts of one of the hole which had failed to do otherwise work. The reason for this is stated in the report, "The gases produced by the first explosion are only blown in the hole, but they penetrate the gases and smoke in the narrow shot hole, and then, when the second shot is fired, the gases are blown into the lower end of the second explosion, while they also escape in a hole from which the gases of the second explosion released, causing them to be produced without much velocity."

23041. Mr. Bruce Smith: Q. What date is that? A. April, 1902.



Witness—J. C. Jones, 1 March, 1902.

- 23037 *Mr. Wade* [There is a diagram here, of the Chamberlain case, showing the locality of these two shots.]
- 23038 [The journal was then handed to the Commission. The two articles referred to, regarding the explosion at the East Creek Mine, Iowa, on the 24th of January, 1902, are copied in the Appendix to Exhibit No. 45 and 46.]
- 23039 *Mr. Wade* [Q Was the first shot exploded? A Yes, but it did not do its work.]
- 23040 *Mr. Wade* [Q It forced the gas into the furnace. That is how he puts it.]
- 23041 *Mr. Brown Smith* [Your Honor will remember that Mr. Webb, Mr. Jones' under manager, gave evidence on the very question from Peabody's testimony.]
- 23042 *Mr. Johnson* [Q Did you ever have any experience of the same nature in Wales, or in your previous experience? A Yes, I have. I have seen persons similar to that, that is, the ignition of powder fumes by a match light, in the old country and elsewhere; and I think I would be able to demonstrate it in a hot day, if you like, when there is no possible means of allowing any fire damp in it.
- 23043 *Q* It is so very extraordinary, it seems to me, that people with good experience in the old country have never heard of that sort? A No, but it is a very common thing amongst the miners here, anyhow. They will tell you of it.
- 23044 *Q* But you would think, if it is a daily occurrence here, that it must have been very well known to every mining man in the old country, where gaspuffer was used as extensively as all mines? A A good deal would depend upon the circumstances, the nature of the coal, and the way they prepared the shot. They prepare them better at home than here, there is no doubt about it, and if the shot has once blown the coal down, of course you could not light the gas. It is only when the shot has failed to break the coal down, and there is that uncondensed heated gas in the furnace. It must be treated, or it would not ignite. It must be treated properly.
- 23045 *Q* If that was it, is another coal in the coffin of gaspuffer? A It is, undoubtedly.
- 23046 *Mr. Wade* [Q He also the miners must keep away from the face after a blow-out shot? A Yes, but, even if you keep away from the face, the gas is still in the mine.
- 23047 *Q* Some suggestion has been made that people never heard of gas in Korea, but that it was really enough heard after the Kambla disaster? A Yes.
- 23048 *Q* What is your experience of that point? A I never saw gas there, only in one place, on a matter of fact, but they have discovered a blow by the hydrogen lamp, the Inspector here, and on one or two occasions, I believe, the detector reported that they could detect something like gas in the lamps, but not exploding in the lamps, or anything like that.
- 23049 *Mr. Johnson* [Q Did not I understand you to say that you had detected it every day? A No, that is the opinion of the powder fumes that happened every day, not the fire damp. The men say they find it.
- 23050 *Q* I thought you said you had found it? A No; I only saw it in Korea more myself, only in one place.
- 23051 *Mr. Brown Smith* [Q And that is since the Kambla disaster? A Yes.
- 23052 *Mr. Wade* [Q And under what circumstances was that? A It was in the face of one of the workings, going up a very steep rise, about 1 in 6. I think.
- 23053 *Q* Is that where Mr. Watson found it? A Yes, that is the same place.
- 23054 *Q* How you told them about it? A Yes, I have not found it since, though.
- 23055 *Mr. Brown Smith* [You said "with a hydrogen lamp"? A I think Mr. Watson found it—[interrupted].
- 23056 *Q* Did you find it? A Not with an ordinary hydrogen lamp. Mr. Watson, I think, the Inspector, found a trace of gas with the hydrogen lamp in one place.
- 23057 *Mr. Wade* [I think, Mr. Robertson, that you said that it was an extraordinary thing that men of experience had not heard of the lighting of powder smoke. I have by a recollection, but I am not quite clear about it, that this question cropped up before the English Royal Commission in 1879.]
- 23058 *Mr. Robertson* [I put it to Mr. Atkinson, as to whether he had ever heard of this question having been raised in any Royal Commission; and he said it was entirely unknown to him.]
- 23059 *Mr. Wade* [I do not say that I am correct; but I have an impression that I have seen it in one of the text books. I will see if I can find it.]
- 23060 *Q* Was you with especially close with any of the Inspectors, on the recent occasion when you have looked for gas in this heading at Korea? A Yes, I was with the Chief Inspector and Inspector Watson. They went right through the mine with the hydrogen lamp, and could not find a trace anywhere.
- 23061 *Q* It has been said that the air at Mount Korea is frequently removed, with the wind blowing from the west? A That is an erroneous idea altogether.
- 23062 *Q* And it is put in this way, that the effect is to drive the return air on to the men working at the face? A I would like to have a lot of paper and make a sketch.
- 23063 [The witness then drew a rough sketch on a piece of paper, showing the main ventilation of Mount Korea Mine. The sketch was put on, and pushed Exhibit No. 50.]
- 23064 *Mr. Wade* [Q Just suppose that sketch in the Commission? A The main tunnel is that long one right opposite the site of the mine, nearly; and the work was this side is what we call Maschikiduk's tunnel. That is an intake, and about others on the side are intakes, and the workings are on the face of the paper as it were. There is a furnace there. When a strong wind went, wind is blowing into Maschikiduk's tunnel, it blows the air in there, and usually takes it on to the main tunnel, whereas, rather more blowing into the other two tunnels would supply the workings with air. So that the air is simply a current made by them strong north westerly winds.
- 23065 *Mr. Johnson* [Q As a matter of fact the mine is not dependent on the main tunnel for its ventilation? A No.
- 23066 *Mr. Wade* [Q And the wind never comes near the face? A Not at all.
- 23067 *Mr. Johnson* [Q And the men coming out would meet the wind? A Yes, they would certainly.
- 23068 *Mr. Jones* [Q The men descend, where the wind ought to be blowing in, the wind blows out of it? A Yes. It has not happened since I have been there. It does not happen often.
- 23069 *Q* But what is blowing out is particularly good air? A Yes.
- 23070 *Mr. Wade* [Q What is the extreme length of that part? A Half-a-mile.]



- 23074 Q. And how far are the working places away? A. They are a mile beyond the junction of those two roads.
- 23077 Q. And under what circumstances does that happen? A. When there is a strong strong south-west gale. I think sometimes a very strong westerly might possibly affect it, but it does not really affect the condition of the road. As a rule, the ventilation of the mine is better on those days than on any other.
- 23079 A. Mr. Robertson? Q. What is the depth of your colliery shaft? A. About 350 feet. One of the witnesses actually said I think that the furnace was reversed. That is absurd. It would burn all the coal round it, and kill all the men if it reversed.
- 23079 Q. Such a thing is not absolutely unknown? A. Oh, no, I do not say it is unknown, but it is certainly a very dangerous thing to happen.
- 23080 Q. But, with a furnace shaft 350 feet deep, it ought to be fairly independent of atmospheric conditions? A. So it is, I think.
- 23081 Q. I was under the impression that it was a short shaft? A. Oh, no, it is 350 feet.

Continuation by Mr. Tyngham—

- 23082 Q. The six, I take it, then, is good at Kewdale? A. At Kew you mean?
- 23083 Q. Yes. A. Yes, it is better now than ever it has been, at all events.
- 23084 Q. Then what are you getting up the fire for? A. To employ more men, certainly.
- 23085 Q. To improve the ventilation? A. To employ more men.
- 23086 Q. You are getting up the fan precisely to improve the ventilation? A. No, to have greater ventilation.
- 23087 Q. When were you in Kewdale before the disaster? A. I really do not know, probably three or four months. I do not know exactly the time.
- 23088 Q. Can you remember being there in 1902 at all, before the disaster? A. I think the last time prior to the disaster was that December one, when I was up here. I am not sure.
- 23089 Q. The impression you made when Reynolds was hurt was the last occasion? A. Not when he was hurt.
- 23090 Q. The impression you made shortly after he was hurt was the last occasion before the disaster? A. It was a week or two prior to your coming up here on the case, whenever that was, and that is not long ago.
- 23091 Q. Did you make any notes of your inspections on the 16th and 27th August? A. Yes, I have got those here in some book, just rough notes.
- 23092 Q. Was it on the 16th of August that Mr. Vickery, junior, was with you? A. No.
- 23093 Q. Was it on the 27th of August? A. No.
- 23094 Q. When? A. I really could not tell you. It was between the two dates, I think.
- 23095 Q. Was not that an inspection also, on the day he was with you? A. I do not say that it was an inspection, we did not make any notes, anywhere.
- 23096 Q. Do you say that between the 16th and the 27th of August you were in with Mr. Vickery, junior? A. I believe it was between those two dates.
- 23097 Q. As a matter of fact, did not you try the six light pillars for gas? A. Well, of course, we might try. We did not go there for an inspection. It was not with a view to making notes.
- 23098 Q. On the occasion that you were in with Mr. Vickery, did not you try for fire-damp at the edge of the six light pillar? A. We went in there, I know.
- 23099 Q. Did not you try for fire-damp? A. We went up on the top of the fall; and I believe we did.
- 23100 Q. And did not you then tell Mr. Vickery that your theory was that there was an accumulation of fire-damp in that gulf? A. Not at all, certainly not, I never said such a thing.
- 23101 Q. I will give you the route you went. You went in the daylight heading. A. Yes.
- 23102 Q. Up the cross rib heading? A. Yes.
- 23103 Q. Along the six light? A. Right.
- 23104 Q. And down the travelling road? A. I do not know. I think we went up the other way first.
- 23105 Q. Very well, along the six light to the back heading, up to the face of the back heading, and down the travelling road into the six light? A. Yes.
- 23106 Q. That is your route, is it not? A. Something like that.
- 23107 Q. Mr. Wade? Tell him who dugged the footings?
- 23108 A. Mr. Tyngham? Mr. Wade said who dugged his footings.
- 23109 Q. Where? You must have dugged them, to know it.
- 23110 A. Mr. Tyngham? Q. Will you swear that you did not tell Mr. Vickery that there had been an explosion of fire-damp? A. No, I did not.
- 23111 Q. Do you remember mentioning fire-damp to Mr. Tyngham? A. Quite probably.
- 23112 Q. Do you remember mentioning that there had been an explosion of fire-damp? A. I do not know, I simply discussed several theories. Of course I made no notes. We discussed several theories that were advanced about that time.
- 23113 Q. Was the explosion of fire-damp one amongst the theories you discussed? A. I think so. I think that was the theory put forward by some of the people, by Mr. Atkinson, I think.
- 23114 Q. Mr. Atkinson was not with you then? A. No, but I am speaking of all the theories spoken of at that time, trying to explain to Mr. Vickery what his own thought and when that was thought.
- 23115 Q. Did not you say to Mr. Vickery that there must have been an explosion of fire-damp? A. Yes.
- 23116 Q. Do you say to the Commission now that there was an explosion of fire-damp in Kewdale? A. I have not the slightest doubt that there was fire-damp in Kewdale. I am quite willing to swear that there was a little gas in Kewdale, but it was the fall that was the primary cause of the disaster, no doubt. That is what my contention is.
- 23117 A. Mr. Robertson? Q. I think you said you were willing to swear that there had been an explosion of fire-damp? A. Let me explain before Mr. Tyngham moves me up. My contention is this—That the big fall created a kind of vacuum in No. 1 around that part however, and gas would escape from the fall through most of the natural atmospheric pressure—just a little gas would escape momentarily. And I believe some of the men were killed at that time, but, probably, their lights might have gone out, and they would strike a match, and would ignite this explosive mixture. That is the only explanation I can give for the subsidence of fire up in the No. 1 system.



Witness—J. G. Jones 4 March, 1935.

21108. Q That is to say, the atmospheric pressure being reduced from the east, the gas would come out?  
A Yes, in small quantities.
21109. Q It must have been only momentarily? A Yes.
21110. Q And then, as the psychological moment, somebody would strike a light? A Yes, but the lights were not yet out.
21111. Mr. Loughlin. Q I want to keep off psychological moments. Is it your theory that there was an explosion of the lamp causing the Keokuk disaster? A No, not causing it, it was as the result of it.
21112. Q Is your theory that the lamp was a factor in the initiation of the disaster? A No.
21113. Mr. Moore. Q I understood you to suggest that there was, probably, actually a second explosion?
- A Well, you would not call the first an explosion, Victor Henry.
21114. Q I mean that there was an explosion after the big outburst from the gas? A Yes, nobody could go beyond that fact, that there was an indication of a fire lamp-explosion in the No. 1 section; but it was in a very small extent. Some people would say the damage was very considerable, but I am sure I have seen ten times more damage done by a rope breaking, or a ship breaking away.
21115. Mr. Robinson. Q Ten times more damage? A Yes. I mean in the No. 1 section, in the fault just the 4th Left. There is no damage done there. There was not a full collapse of the 4th Left, and only a few ships collapsed there.
21116. Mr. Eshelby. Q I understood you to say that the initial cause was a fire? A Yes.
21117. Q But that probably through that fall there was no one killed whatever? A On the main tunnel there would be.
21118. Q You think there would be on the main tunnel? A All those on the main tunnel would be killed, of course.
21119. Q I understood you to say that probably from the initial cause of the disaster there would be nobody killed? A No.
21120. Q But the subsequent explosion, which you now speak of as gas, has really been the cause? A That would kill the men below—I mean in the shaft section—long after the fall.
21121. Q That explosion of gas would kill the men below, and the fall, or the result of the fall, would kill the men early? A There is no doubt about it.
21122. Mr. Moore. Q Then, according to your theory, what was the cause of the great exhibition of force which blew men out of the position of the 4th Right with the No. 1 main loading? A The force was only comparatively small. Your theory, in a way. And you must also consider the fact; when that great force of air was going out, it had some effect on the ships which were stacked in the upper, and the ships which were stacked in the lower, upper, and the action of the force going outwards would show on the ships below. They were all attached.
21123. Q Then you do not attach any importance to the fact that there was really a great exhibition of force which blew a point near the 4th Right? A The only exhibition of force I could see was a few ships knocked about, and that would be explained either by the connection on the same rope that was attached to the ships outwards—and they were knocked about triflingly by the pressure—was probably, by the force passing outwards, there might be an action afterwards, as the result of the action.
21124. Mr. Robinson. Q The evidence of the ships below shows that they were driven out? A That might be caused by the motion of the air to fill the vacuum. There would be a return of air.
21125. Mr. Moore. Q That return would show itself as a great force which from the very mouth of the tunnel, out from a point a long way up, like the 4th Right. The exhibition of force going up, as you say, would be how that is called a back-lash—well, a back-lash would not begin at the 4th Right, surely. The correct answer for it is that way?
21126. Mr. Eshelby. Q We might say what would cause the return of the force from outwards, considering it was an open tunnel?
21127. Mr. Moore. Q Mr. Jones has not answered my question.
21128. Witness. Q What was that?
21129. Mr. Moore. Q How on earth could a back-lash begin, to operate in the tunnel from a point near the 4th Right, and operate for a short distance to a northern direction, while there was no sign of a back-lash—that is a force which—in the northward of that point—was where the 4th Right comes in? A There is that 4th Right, there would be a connection road there through the travelling road. There may be a back-lash that way.
21130. Q I do not see it.
21131. Mr. Eshelby. Q Where do you say the explosion of gas would take place? A I would not like to locate the spot. I could not do that, but I should imagine it would be somewhere near 4th Right place, somewhere that way—some place near there. I forget the name of the place where I saw some indication of force and intense heat, but that, in the only place I know of that would be indicative of a slight explosion—and only a slight one at that.
21132. Mr. Robinson. Q I understood from you that your idea is that there was a fall causing a great back of air that killed the men at the way out to the tunnel mouth, and then the vacuum caused by that back of air caused a necessary rearrangement of gas from the end? A That is right.
21133. Q And that, in that time, was ignited in some way by a light or by a match? A That is right.
21134. Q And that caused the explosion and the after-damp from which the majority of the men were killed, is that it? A That is almost it. Of course, it is one of those things of which nobody can say where it occurred, nor what occurred. You can only assume the nearest approach to the evidence.
21135. Mr. Loughlin. Q While your mind is on that view just by Mr. Robinson, do not you know that Inspector Bates was in the two-story road out of the 4th Right, and escaped—he was not killed by the blast? A He was not in the main tunnel.
21136. Q He was in the travelling road? A There was no blast at all in the travelling road. There is no evidence of one.
21137. Q Regarding the point just by the Haines, do not you know that a burst in the position of the 4th Right was blown some distance, and the boy Hennessey was blown right up against the ribs by the force—the whistler? A At the 4th Right?
21138. Q At the 4th Right. The burst was blown right over, and the boy Hennessey was blown right up against the ribs? A I do not see how you could say that the burst was blown over.



23149 Q The witness here described that, the witness Hanson had described that he was blown some distance up against the shed. A I do not know. There are a lot of things that you cannot account for. 23150 Q Let me know that for the present, I want to keep you to this gas business. Did you see any signs of burning by flame in other places about Ashcroft? A Yes, I saw a little charred pop, I think, in No. 1 Right.

23151 Q But, because that, did you see anything else? A No.

23152 Q Do not you remember among the masses at the top of the bank heading here burnt? A No, I do not think it was burnt.

23153 Q Did you notice the masses? A There was a hole in it.

23154 Q Do you mean to say it was not burnt? A It was just the color.

23155 Q In your opinion it was not burnt? A It was not burnt, it was not consumed, anyhow.

23156 Q Do you know that some were burnt at the tunnel mouth? A Very likely. I do not say they were not.

23157 Q How do you account for the flames coming down the mass tunnel? A I do not say there was any flame there at all.

23158 Q What about the mass at the tunnel mouth? A Black.

23159 Q Only black? A It is no use to argue that there was flame out there, unless you can show where it did its work.

23160 Mr. Anderson: Q What is that, please? A Mr. Lyngby says that somebody was burnt out there. You can get evidence to say anything. You would want to show evidence of it, anyhow.

23161 Q But what about the bodies? A I never saw any bodies there at the tunnel mouth.

23162 Q Not at the tunnel mouth? A I was speaking of the tunnel mouth now. If there had been flame at the tunnel mouth, there would have been plenty of signs there to have ignited all the timber and everything else.

23163 Mr. Lyngby: Q Do you know that Dr. Wells gave evidence at Widdowson of a mass at the tunnel mouth having been burnt by flame? A I think he gave contradictory evidence. I think his evidence was contradictory as to that.

23164 Q Listen to this *deposition* from page 24 of the *deposition* taken at the Coroner's inquest:—

I went in for an hour. That, as we proceeded we met a number of men coming out. I do not know the men's names. I could not swear whether Hankey's hair was singed or not, or the hair of my immediate cross of Hankey's clothing was singed or singed; that was blood and not that on his hair. I believe his hair was burnt too; that is, by a flame or heated from exhaust heat. I was the first medical man to render assistance, the first man I attended to was John Clark; that was about 9 o'clock. He was badly burnt, his head, neck, face, arms, and hands were burnt, he is lying still, the front of his chest was slightly burnt, he was suffering from shock. I did not have time to make records, afterwards that I had forgotten it so that time, but I have made it up now, I would not expect to find any signs of action or marks about him, so that we outside the mine in a shed, his head was burnt from a flame.

A Where did he come from?

23165 Q From the tunnel mouth, outside the tunnel mouth. A Well.

23166 Q Now, can you account for Clark, outside the tunnel mouth, being burnt by flame, unless flame came out of the tunnel mouth? A I cannot. I am quite sure the flame did not come out.

23167 Q Do you know that witnesses saw the flame? A No.

23168 Mr. Wells: We have not got that evidence here.

23169 Mr. Lyngby: I will get it in reply.

23170 Witness: Do you mean to say that flame came out? — [Interupted]

23171 Mr. Lyngby: Do not argue with me. I want to save time.

23172 Q Now, speaking of the air that would be forced out of the grid, do you know that, according to a plan that we had drawn yesterday (Exhibit 45), there was but a very small area left to fall? A I did not know.

23173 Q Just look at that plan, drawn by Mr. Leitch. [Plan was shown to witness.]

23174 Mr. Wells: He made it 1,750 square yards.

23175 Mr. Lyngby: Q You see that plan? A Yes.

23176 Q That represents the amount of coal remaining in the 4th Right pillar on the 6th of June? A That is one week before the disaster.

23177 Q Yes. A Well, you can take twice as much as that out in six weeks.

23178 Q We have evidence that all the coal that it was practicable to take out was taken out, and the timber was drawn, some week before the disaster? A You have not got evidence to show how much coal there was and how much you had to get out.

23179 Q Now, you stated that those props would probably have been withdrawn from the pillars, to let the pillars fall, and the props would have been worked in the 6th Right? A Not necessarily drawn; but those might have been props lying in there ready to support the roof.

23180 Q Now, Morrison has told us that the timbers were drawn at least ten days before the disaster. The 30-yard pillar adjoining the back heading would not be touched at all? A No.

23181 Q That 16 yard pillar was surrounded by a fall, because the timbers had fallen in, according to Leitch? A Yes.

23182 Q All those had been worked out before Leitch had left. That is as shown on Leitch's plan so that all the coal to be taken out was from this 16 yard pillar on each side. Do you see that (explaining the question by pointing to the plan, Exhibit No. 45)? A I do, assuming that the coal had fallen, you say?

23183 Q Mr. Leitch said that the timbers had fallen. Now, that being so, do not you see that, with these timbers down, the roof down, there would only be this small aperture made of the 4th Right for any fall to spread on, because the left of the timbers would stop any force from the fall that might come from the 16 yard pillar? A Yes, as certain assumptions you put here.

23184 Q Exactly, on the evidence of Leitch, now, then lying in, how could there possibly have been any air forced out?

23185 Mr. Anderson: I do not quite follow that.

23186 Mr. Lyngby: The 8 yard timbers having already fallen before these pillars were extended, and there only being this opening down here, then this would fall it would be falling against a place already down, against the timbers; and therefore there would not be that escape for it to form anything from there.

23187 Mr. Anderson: It would still have its outlet,



Witness—J. G. Jones, 4 March, 1909

- 23185 *Mr. Lusk*. [Only a small section, and only a small area to fall into.] The only portion that could fall would be this here, which would form the air, not straight out, but from each side at right angles.
- 23186 *Witness*. [But why could not another portion of the roof fall?]
- 23187 *Mr. Lusk*. [Mr. Lusk stated that the whole of the roof had fallen; that all the roof behind the 36 yard pillar had fallen heavily and was right.
- 23188 *Mr. Wade*. [He did not, he said there were 36 yds. x 2 yds. that had not fallen.
- 23189 *Mr. Lusk*. [Yes, I am aware of that.
- 23190 *Mr. Wade*. [You had better tell him that.
- 23191 *Mr. Lusk*. [That had not fallen, but at this side [pointing to the sketch, Exhibit 65] had fallen solidly.
- 23192 *Now, do not you see that, having fallen solidly, and fell from the big and pillar face would force the air out at right angles there, and not directly out? A. That it would have to go out certainly.*
- 23193 *Q. But it would not go out with any degree of force? A. Oh, yes, it would.*
- 23194 *Q. Do you know that Mr. Lusk admitted yesterday that, in his opinion, there would not be sufficient pressure of air from the fall to even blow out the narrow stoppings between the two headings? A.*
- 23195 *Mr. Wade*. [That is not correct, none again.
- 23196 *Mr. Lusk*. [I think he said there would not be sufficient air to force it to any appreciable extent.
- 23197 *Witness*. [Then Mr. Lusk did not know what he was talking about.
- 23198 *Mr. Lusk*. [I do not think he said that. I think he said it would not force out the stoppings, not the correct force.
- 23199 *Mr. Lusk*. [I took Mr. Lusk to mean the stoppings between the front and back headings.
- 23200 *Mr. Lusk*. [A door is not a stopping.
- 23201 *Mr. Lusk*. [Q. Mr. Lusk stated that there was not sufficient force to blow out the stoppings in the 4th flight. Now, your theory is that there was not only force sufficient to blow out stoppings but also to bend the bars? A. Undoubtedly that force was there right enough.
- 23202 *Q. Do you say that that force came from the 3rd flight pressure of air? A. I do not know of any other place.*
- 23203 *Q. And then you go on to say that Mr. Lusk knows very little of what he is talking about? A. No, I say that, if Mr. Lusk said that in the way you put it to me, he does not know very much about what he is talking about; because I have seen stoppings a good many yards back falling down from a shock, the consequence of a powder shot even.*
- 23204 *Q. Look at this plan; will you tell me, considering that this roof had fallen, and that there was only this 36 yard pillar to be taken out, where you are going to get a fall sufficient to force out air in any quantity? A. It does not give the lengths here or anything else.*
- 23205 *Q. It is measured—that is 16 yards? A. That is the width, when he left, there was some more to take out, there was six yards more.*
- 23206 *Mr. Lusk*. [And the roof was falling down from day to day.
- 23207 *Mr. Wade*. [There is not a word of evidence of that.
- 23208 *Mr. Lusk*. [Q. Then being the position in the fish of John and we having got evidence that all the roof then could be taken out was when day and the mass withdrawn, and the timber drawn two days before the disaster, and evidence that 3 feet 6 inches in height of a fall had taken place a week before the disaster, so that Morrison could not go in beyond the edge of the gulf to inspect it safely, will you tell me where your first is going to come from?]
- 23209 *Mr. Wade*. [That is not the evidence at all. Morrison never said that he would not go beyond there because the fall was not safe. He said that, near the fall tank pit, there was no reason for him to go in; it was barred off.
- 23210 *Mr. Lusk*. [He said it would be risky to go in, because of the chance of another fall.
- 23211 *Mr. Lusk*. [He said it was possible to go in, but not safe.
- 23212 *Witness*. [It is possible that it would not be safe. There are 3 acres now of roof stalling on Oakhill's without a pillar of any kind.
- 23213 *Mr. Lusk*. [Q. What have we to do with Oakhill's? I want you to keep to this for a minute. Did you know that 3 feet 6 inches had fallen a week before the disaster? A. No, I did not.
- 23214 *Q. Does that at all affect your calculation of force? A. It depends upon the area; you are assuming that the whole area fell.*
- 23215 *Mr. Lusk*. [Q. What area did you assume? A. Just a quarter of an acre.
- 23216 *Mr. Lusk*. [Q. Where did you get that from? A. One of the witnesses told me.
- 23217 *Q. Who? A. One of them said it was about a quarter of an acre.*
- 23218 *Q. Who? A. That is very near a quarter of an acre there [pointing to the area on the sketch, Exhibit 49].*
- 23219 *Q. Who told you that there was a quarter of an acre stalling? A. I know there was somebody talking about it that way.*
- 23220 *Q. Do you tell me that you have your theory on what somebody told you outside? A. I think that what you have been showing me is just about a quarter of an acre.*
- 23221 *Mr. Lusk*. [Yes.
- 23222 *Mr. Lusk*. [Q. The 3 feet fall on the edge of the gulf having been a week before the disaster, does that affect your calculation of the force? A. I do not think it would.
- 23223 *Q. In view of that knowledge, do you still say that? A. I can only say that, assuming that there was an area of a quarter of an acre of roof falling all at once, there would be a certain amount of force and a certain velocity.*
- 23224 *Q. Taking it that there were 3, but already fallen at the gulf edge? A. That would not necessarily alter the calculation, because there might still be 5 feet of a fall.*
- 23225 *Q. Then do you mean to say that, in having split like that, and fallen 7 feet, the next fall would be as solid fall, and not split also? A. It might be.*
- 23226 *Q. So that it is assumed for your theory that it should have been a solid fall of at least about 5 feet? A. Yes, not necessarily to do that damage; but to make that clearly that I have given.*
- 23227 *Q. Do not you say that that solid fall of 5 feet would shut up the edge of the gulf entirely? A. Of course it would, and so the measure the air has gone out.*



- 22290 Q And do not you know that the stains at the edge of the gulf were done after the disaster; is that what they had not fallen until after the disaster? A I do not know.
- 22291 Q Did you look it? A I did not see it.
- 22292 Q Do you mean to tell me that the stones at the edge of the gulf were not clean? A They were dirty enough. If you swept over them you would get dirt on your clothes, but it was not black dirt.
- 22293 Q Where did you get the statement that it fell 5 feet lower? A Taking the height of the room as being 5 feet.
- 22294 Q But still you did not know anything about the fall of 2½ feet? A No, but that would leave a space of 2½ feet above, and would give you the same room again so that there would still be 5 feet of space on top of that 2½ feet fall.
- 22295 Q Where did you say the first came from that was accelerating this first fall? A Probably it would be out of dust.
- 22296 Q You mean the spooks of dust? A Yes, it is very hard to demonstrate it though.
- 22297 Q You do not approve of that theory that the dust that was not ignited at all? A Well, it would be expanded considerably, and would get to a great heat, but I do not know whether it would get to a flame or not, because there is no indication of flame.
- 22298 Q Do you know Mr. Belmore theory of heat being generated by the explosion of air, and that there was no flame at all? A Yes.
- 22299 Q Do you approve of that? Do you adopt that theory? A No I do not; not exactly; I cannot.
- 22300 Q And you are satisfied that there was flame as some part of the mass? A Yes, I believe up to this fact there would be flame.
- 22301 Q And you are satisfied that that flame came from the igniter of the dump? A I think so, and could have.
- 22302 Q And where do you say the fire dump came from? A I have already explained that I think that through the action of the big fall, there would be a kind of vacuum round the foot somewhere, and gas would escape.
- 22303 Q You do not suggest that it came out of the 4th flight waste? A No, I do not, although it is possible. I know a case that occurred shortly afterwards in Cornwall, which indicated that in some of the old gulls there is gas in the floor. It is possible that something like that may have occurred in the 4th flight in Kenble. The floor cracks. It appears that in Cornwall, gas came through its light on the floor, and it ignited gas, and the light ran along 20 or 40 yards into the roof. It is possible that might have come gas there on the floor of the 4th flight.
- 22304 Q But would not a small red light to ignite it? A Yes.
- 22305 Q You told Mr. Wells you only remembered hearing of gas come in Kenble, and that was when the light was turned? A Yes.
- 22306 Q Did you ever read the report of the evidence taken before the Coal Mines Commission in 1925? A Yes.
- 22307 Q Do you know that Mr. Roundell, the then Manager of Kenble, admitted that Kenble gave off gas in all parts in small quantities? A I do not remember that.
- 22308 Q That after your opinion, does not it? A I would like to hear the very incident; because all mines give off gas.
- 22309 Q Coming back to this first question, I indicated that you say that, since the gas was ignited, the incident there occurred on the explosion at the various parts of the mine? A There is no doubt about it.
- 22310 Q And it is the dust that, in your opinion, would account for the steps being blown about and men injured about Freeton? A Yes.
- 22311 Q And the violent explosion would account for some of the signs of force in the main level? A Possible incident, expanded and dust—it is possible.
- 22312 Q Did you not see evidence of holes from all along the 4th left track and also made? A No, I did not. I saw some near here, over Station's place and the top of No. 1 back heading.
- 22313 Q It being clear to your mind that the explosion was covered on by dust and, it is clear that, in the parts where the dust did carry it on, they were dusty parts of the mine? A With the dust had been raised by the force of the wind.
- 22314 Q The dust was raised from where? A From that distance, from the fall.
- 22315 Q Do you mean that the dust would be raised from the floor and where? A Yes.
- 22316 Q And—[interrupted]— A As to all mines. It was not a dusty mine.
- 22317 Q There is no, please, just say the dust would be raised from the floor where ever the blast might be travelling? A That is so.
- 22318 Q That being so, that dust was a dangerous condition present in the mine? A Oh, I do not know; you would not consider it that, Frank.
- 22319 Q It turned out to be dangerous? A It may have turned out to be dangerous.
- 22320 Q Have you been concerned, before the Kenble disaster, to have the dust in Kew? A No, Kew is naturally damp.
- 22321 Q Then, in your opinion, had the mines been free from the dust that apparently did accumulate along there, the extent of the disaster would have been considerably reduced? A You mean if the mine had been swept out.
- 22322 Q No, if it had been kept clean or watered? A Well, if you had some means of preventing the run from rising, it would not have been so bad.
- 22323 Q It seems to have been taken to prevent the dust rising, the extent of the disaster would have been considerably reduced, in your opinion? A It would not have had such the same much, does there [according to the plan maybe get dust].
- 22324 Q Along the 4th left it would have been considerably reduced? A There would not have been as much means made afterwards.
- 22325 Q It is a fact that as the result of your experience, you told Mr. Valberg, junior, that you were satisfied that the main factor in the explosion was not dust? A Certainly not.
- 22326 Q You made a statement about there being a long stretch of red in the main level unexpended because it was strong? A Yes.



Witness—J. C. Jones, 1 March, 1906.

23107 Q What was the largest stretch that you know of unsupported? A I do not know; probably 300 or 340 yards.

23108 Q And that was the part that afterwards fell? A Some parts of it.

23109 Q But we may take it that there were several stretches of from 200 to 300 yards unsupported along the main level? A Yes, it is a very good word there. There were a few falls here [pointing to the plan].

23110 Q Do you consider that allowing such a stretch of roof without support is dangerous? A Certainly not.

23111 Q While you were going round that gas, did you notice whether there were stoppings at the North end of it? A Yes there were stoppings.

23112 Q Were there any openings without stoppings? A I believe there were some openings, but they were not connected with the gas. There were openings at the side of the 5th Right here [indicating the plan]. I remember going in, but they were not connected.

23113 Q. Mr. Davies? Q What would those places open into at all? A I believe it was this that I am referring to [pointing to the opening out of the western side of the central rope road].

23114 Q. Mr. Langley? Q I was talking about the top, the north end of the 33 acre gas? A, I do not know whether there were any openings there at all.

23115 Q Is not this a fact, that you sent Mr. Hamble and Adam Frost inspecting right in the gas? There, in one of those openings at the north end, and had a conversation with them? A No, I do not remember meeting them there at all.

23116 Q Do you remember meeting Inspector Hamble and Adam Frost about the North or 25th opening along here [small side of the 5th Right]? A We were stopping some of them up [not end of cross-examination] with lathwork when we met Hamble.

23117 Q Did not you meet them here, on the north side? A I do not think so.

23118 Q Had not you a conversation with Hamble when you met him? A I do not remember it.

23119 Q You say you were putting in lathwork? A Yes, we came here for the purpose of carrying the ventilation with us right round, and, of course, being in possession of the mine here, we thought we would stop up every place as we went, but we found that we stopped a lot of places that did not require stopping.

23120 Q Do you remember that Adam Frost was with you? A One of the Frosts.

23121 Q Do you remember stating then that it was clear that there had been an explosion of the damp? A I do not think so.

23122 Q Will you swear you did not? A No, certainly not.

23123 Q Do you know that after the disaster the Chief Inspector found fire-damp in the top leading with the safety lamp? A Yes, I do know that.

23124 Q Did not that indicate that the fire was going off first damp? A It indicated that the gas got there after the explosion somewhere.

23125 Q Did not it indicate that it was coming from the fire? A I do not know.

23126 Q These do you suggest that it was coming from, if it did not come from the fire? A It might have come from the fire.

23127 Q Where would you suggest it came from? A From the top of the back heading.

23128 Q Do you know where the Inspector also found gas in various levels on the left of the No. 1 Main Road? A No.

23129 Q With the hydrogen lamp? A No.

23130 Q If he did not that clearly indicate that the facts were giving off gas? A That it had been given off somewhere.

23131 Q. Mr. Fife? Tell him the ventilation was changed.

23132 Q. Mr. Langley? Q And did not that lead you to the conclusion that it was giving off gas before the disaster? A No, not to any appreciable extent.

23133 Q You read something about your own miners finding gas every day in Keweenaw? A No; I said the miners were ignoring it, but we could never find it. By saying that, I meant that the men, since the disaster, think that everything they come across must be fire-damp.

23134 Q Do not you know, perfectly well, that, in your own depots' report books, gas has been reported there nearly every month? A No, it has been reported by the miners.

23135 Q No, reported by the depots? A No.

23136 Q Do I understand you to say that your depots have not themselves reported finding gas in Keweenaw since the Keweenaw disaster? Q I did not say that.

23137 Q Do not you know that your own depots have reported finding gas in Keweenaw nearly regularly every month? A No, they have not regularly. They have only found gas in a very few instances, and then they say it is not appreciable—they can scarcely detect it.

Examination by Mr. Bruce Smith.—

23138 Q You have been here as an expert, have you not, pretending to be able to give an opinion, based on a large red mining experience, on this explosion? A Opinion on the explosion?

23139 Q Opinion on the cause of this explosion? A No, I do not say I am an expert.

23140 Q Then what did you come here for? A, I came here to give evidence, such as my own observation went.

23141 Q Have you formed an opinion as to the cause of this explosion? A The fall, I have said already.

23142 Q Have you formed an opinion, a clear opinion? A That is my opinion, as far as I am able to say.

23143 Q I do not see so to know what your opinion is, I asked you have you formed an opinion? Q Not a satisfactory one.

23144 Q You do not feel satisfied? A No, I never really myself.

23145 Q I understand you to say that the fall has been the element in that? A There is no doubt about it.

23146 Q And you have been another element? A Yes.

23147 Q And red dirt has been another element? A Yes. Well, there was no original element in the coal dust.



- 13206 Q. I did not ask about an original shewal. I said coal dust has been an element in the disaster? A. Yes, undoubtedly.
- 13207 Q. Coal dust, gas, and the fall? A. Yes, that is right.
- 13208 Q. Have you no opinion as to which of those was the first? A. I think the fall.
- 13209 Q. You do not feel at all confident about it? A. I could not think otherwise than that the fall fell first.
- 13210 Q. And after that you think there were gas explosions, and coal dust explosions? A. Yes.
- 13211 Mr. Robertson Q. I understood the evidence to be that after the fall there was wreckage; and then there was explosion, wreckage, and more falling? A. Yes.
- 13212 Mr. Bruce Smith I want to see what his evidence amounts to. Now, we have got it that there are three things, a fall, gas, and coal dust, and in just the fall first.
- 13213 Q. Now, all the information you have about the fall, the extent of the fall, you have got outside, from people talking—the fall being a question of an acre in extent? A. Well, however, I think he was with us when we first saw the fall.
- 13214 Q. Then you got it from Morrison? A. Yes, as near as I can make out.
- 13215 Q. The opinion you formed about the focus on the 4th Right is that they were outcrops? A. No.
- 13216 Q. Did not you say that from the 4th Right up to the 5th Right there were no evidences of force outcrops at all? A. No.
- 13217 Q. You admit there was evidence of an outcrop force? A. Yes; but I think those would be after the outcrops force. It would be like a station.
- 13218 Q. Did not you say, "I saw no indications of an outcrop force between the 4th Right and the 5th Right"? A. That is wrong.
- 13219 Q. Will you tell me what are the indications of force outcrops of the 4th Right? A. That is the surface and slope.
- 13220 Q. Giving which way? A. Giving outcrops, as far as I could see.
- 13221 Q. Did not you tell the Commission that in your opinion, the effect of the fall would be to drive the great force outcrops, and by a process of series to drive things from outcrops of the 4th Right outcrops? A. No, I did not attempt to convey that at all.
- 13222 Mr. Robertson I think it is what I think how to say.
- 13223 Mr. Robertson I understood him to say that.
- 13224 Mr. Bruce Smith He said it would show Morrison's light out in that way.
- 13225 Mr. Bruce Smith Yes, by surface.
- 13226 Q. Did not you say then—I took it down—"I believe that the great force coming out of the 4th Right would act as a station, and drive the way of the 5th Right, instead of forcing it outcrops"? A. I do not remember saying "instead of forcing it outcrops."
- 13227 Q. Do you know now that the whole of the focus from the 4th Right to the 5th Right are outcrops? A. They would be very light, I am sure. It would not be much.
- 13228 Q. Do you know just they are all outcrops? A. Yes.
- 13229 Q. Explain to the Commission what you mean by this station? [Interposed.]
- 13230 Mr. Bruce Smith He has made it perfectly clear that, on account of the angle of the 4th Right with the main leading, the force coming out of the 4th Right would be outcrops.
- 13231 Witness A. I showed a momentary motion backwards.
- 13232 Q. What do you say, now about this Mr. Jones, however, you are posing as a scientific witness? A. I would like to see the scientific man to explain that, though.
- 13233 Q. Do you mean to say you cannot explain it? A. Certainly; I have said that from the very beginning.
- 13234 Q. I thought you came here to explain it to the Commission. You cannot explain it. A. No.
- 13235 Q. You have really come here without any knowledge of the science in which people were learned? A. I did not assume that.
- 13236 Q. But do not you know that, in trying to give it my scientific conclusion, you went off the data before you? A. You cannot get it.
- 13237 Q. You know that it is necessary in order to arrive at a conclusion of any value at all, you ought to know all the data before you? A. Yes, but you cannot get it.
- 13238 Q. And you had not it? A. No.
- 13239 Q. And you did not know, when you went into that box, the extent to which men were hurt? A. Certainly not, it is not known yet, so far as I know.
- 13240 Q. You did not know that men had had all the body burst off three heads? A. No.
- 13241 Q. You did not know that all the force were outcrops from the 4th Right to the 5th Right? A. I know that.
- 13242 Q. What did you mean by your career theory then? A. I meant when I said.
- 13243 Q. It is what it is? A. I believed, and I still believe, that the strong force going up from that direction would cause a momentary movement like that [Illustrating it with his hand as he says] would cause a fall.
- 13244 Q. You tell the Commission that the effect of this great force coming out of the 4th Right would be to drive things outcrops, and subject to being the things down to the 4th Right? A. Well, it would be probably a complete, like a shock.
- 13245 Q. Will you tell me what focus it was that drove things outcrops afterwards?
- 13246 Mr. Bruce Smith I think it is a quarter to 1; and Mr. Jones may think that out doing the adjustment.
- 13247 Mr. Tuck I have found the passage I had in my mind, with regard to the statement being made previously that carbonaceous was known to be in the beginning of a blasting process. It is in Mr. Donald Stewart's book "The Origin and Extension of Colliery Explosions," pages 96 and 99. The evidence of Mr. J. Dickenson, the late Chief Inspector of Mines in England, before the Royal Commission upon Asbestosis at Mines in 1870, is cited, thus:
- Q. Do you in your distant work with any other delirious your leader for doing any black thing? A. Yes, all mines, if any will be satisfied, are subject to black damp and, usually, to what we call white damp, which is probably carbonic acid.
- Q. Will you tell me how the men were? A. Yes, sometimes, I think, but were particularly from the gaspander, and were frequently put next with a new fire in the mine. It is a very gas to deal with, in the white-damp, because your



Witness—J. C. Jones, a Greek, 1900

your light eyes and you can only judge of darkness upon a lantern I can by seeing your legs twinkling, or your head striking out of water, and I believe you, (1) as you will let me know and tell me. But the black sleep easily always gives you a wrong impression, and unless you get suddenly into it, you generally have time to escape. The light gas out, Mr. Jones thinks the Chemical Department, says when there is about 2 per cent, and that a per cent. would be fatal.

23150 Mr. Anderson: Oh, yes, that is well known.

23151 Mr. Jones: That is what I was referring to.

[The Commission then adjourned until 5:45 p.m.]

# Afternoon

[On resuming at 5:45 p.m. Mr. W. B. Frost attended to take shortened notes of the evidence and proceedings.]

JACOB CARLOS JONES, previously sworn, was further examined, as under—

Examination by Mr. Bruce Smith (continued)—

23152 Q. You were telling us before lunch that, in your opinion the force which came from the 4th Light consisted of gas, gas, and solidities, and that there were the three elements in the explosion. I am not saying to what extent such was expected, but there are the three elements, and I ask you in what order you think they operated. I think you said the gas came out first—where did the gas come in? A. I should think the gas would come a few seconds before the solidities.

23153 Q. Before the gas came? A. I should think they would come out simultaneously. Probably that would come almost directly after the big bang came out. It would come first. It would come out with sufficient force as to come in, and while this was going on—[interrupted].

23154 Q. You think it was a sort of dead heat, and that the gas and solidities came out simultaneously?

A. Yes.

23155 Q. And you were told that a quarter of an acre fell? A. Yes.

23156 Q. You do not know how far it fell? A. It must have fallen to the floor.

23157 Q. From how far above? A. From the height of the room.

23158 Q. You did not know that there had been a fall of 2 ft. 6 in. the week before? A. Positively that would not be the fact.

23159 Mr. (Smith): Q. Do you say a man, or a night, or it would not? A. The fact that 2 ft. 6 in. fell last week still leaves 2 feet for another fall. It does not alter the depth of the fall.

23160 Mr. Bruce Smith: How high does a fall extend? I suppose there is no rule. Does it not depend upon the nature of the falling object? Why do you assume 5 feet? A. If it were only a foot in thickness it would still have a stroke of 5 feet.

23161 Q. Would it not matter whether it was 1 foot or 10 feet in thickness? A. No, it would not matter. I think you are taking a wrong view.

23162 Q. No, I am a mere mark of interpretation? A. And an unfortunate one.

23163 Q. I will assume you are correct? A. Well, what would it matter how thick the plates would be in falling?

23164 Q. Then weight had nothing to do with it? A. No.

23165 Q. Then, if a big plate of 10 in. thick had fallen over a quarter of an acre, it would have the same effect as if 10 ft. 6 in. thick had fallen? [No answer.]

23166 Mr. Jones: Q. Mr. Jones is only speaking with regard to the effect of the first fall on the height of the second fall? Q. Mr. Jones is only speaking with regard to the effect of the first fall on the height of the second fall. You have got now now on the question of weight, which is another element in the case. If the height of the opening was 5 feet, and another fall took place, the size of the opening this remained would only be affected by the expansion of what fell.

23167 Mr. Bruce Smith: Q. If 2 feet fell, what height would it be? A. There would be a little below uniformity.

23168 Q. When you saw 250 miles in front, you did not know there had been a first fall? A. No.

23169 Q. You told the Commission last, whether an inch or 10 feet fell, it would make no difference? A. No, if a fall on the same time.

23170 Q. Is not the amount time dependent on the weight of the fall? A. No, certainly not.

23171 Q. There is not an element at all. It does not matter whether it is an inch thick or 10 feet thick? A. No, it is the same.

23172 Q. Where did you get the second from? A. You must assume something. It would be something—say a second.

23173 Q. Are you assuming that it is all at once? A. Probably. The tower was crushed a little.

23174 Q. You assume that the tower was—what? A. I assume that it was hanging.

23175 Q. You say that it did not all fall at once—that the tower fell first? A. It is long.

23176 Q. It is long, it must fall? A. It must leave.

23177 Mr. Anderson: Q. You mean say? A. That is the supposition.

23178 Mr. Bruce Smith: Q. The tower just sagged before the whole came down? A. I think so.

23179 Q. How long before the tower just fell did the tower just fall? A. It was gradually sagging all the time from when they took the roof.

23180 Q. It might have been going on for a month? A. It could be sagging until it broke.

23181 Q. According to your theory where did the gas come from? A. I never fixed my spot, all along the floor.

23182 Q. Why have you assumed that gas was an element? A. There was gas, from the appearance of the burnt props.

23183 Q. From the appearance of the burnt props you assume there was gas? A. Yes.

23184 Q. Have you formed any opinion as to where it came from? A. No, only from the solid floor. Of course I go upon the ground—all sort of, if you can collect it from the pressure of the atmosphere, you'd probably make gas more or less.

23185 Q. It is simply from the fact that you conclude that there was gas in this explosion? A. Yes.

23186 Q. Did you ever find out whether people were killed in this case? A. If I simply say yes, you will draw a wrong conclusion from it.

23187



33383. Q. You do not know that men were actually burnt, according to medical men's opinion, at the very mouth of the pit? A. I know what medical men had said in some cases, but I do not know where the men had been from. I have seen the medical men's evidence in the newspapers, which I did not take much notice of.
33384. Q. If you did not see a man, and the medical men said that he was burnt, you would not take notice of it? A. Under the circumstances, you are—[interrupted].
33385. Q. Do you take notice of what the doctors say? A. I can only say under those circumstances I want to explain why. I was there all the time the bodies were coming out. My son was in the room when the medical men were, and they did not make a medical examination for the purpose.
33386. Q. You set your own opinion concerning what you saw against the medical evidence? A. I do not.
33387. Q. Why do you conclude that you take an action of what medical men say? A. Because I think it is false.
33388. Q. Do you know that as long as three doctors said that there were evidences of flame? A. I do not know.
33389. Q. According to your theory, how did the coal-dust get on fire? A. There are many theories. I cannot explain it.
33390. Q. How did you arrive at a conclusion on the matter? A. Simply from experience in other places, and from what I read.
33391. Q. You began your evidence by telling the Commission that you had had a good deal of experience in the Ball's district, and there was no comparison between that and the Kamble district? A. I meant as to the question of extent.
33392. Q. Did you not say there was no comparison between Kamble and Ball, and that in Ball no men came out, but in Kamble some? Did you say that? A. Yes.
33393. Q. Do you say there is no comparison between them? A. If you want to compare the appearance of the dust seen at Kamble, and the damage done there—[interrupted].
33394. Q. Tell me a single point which was not present in the Kamble district but was present in the Ball's district? A. It is a question of extent now.
33395. Q. Mr. Wade? It was a question of extent before. Do not say "now," please.
33396. Mr. Wade. Q. Until this morning you never heard of gas being found in the Kamble Mine, except in the case of Galsgrief? A. Do not concern.
33397. Q. You do not know that Mr. Atkinson found hundreds of feet of gas there? A. After the explosion, I met Mr. Atkinson on the spot.
33398. Q. Does that not convince you there was gas in the mine? A. I met Mr. Atkinson myself. The ventilation was damaged then.
33399. Q. It showed that there was gas in the mine, and, if the ventilation was damaged, it would accumulate instead of being carried off? A. Yes, that is all right.
33400. Q. Will you explain your second theory again. I could not understand it. You say that the immediate effect of the passage of air out of the 4th shaft would be, not to drive everything up, but to drive things out? A. I think it would be so, on the principle of the siphon.
33401. Q. How do you account for the fact that a great many ships and so on, were driven up? A. The instant moment for everything. It is fully to me.
33402. Q. Are they not before in coming in some time? A. You would have to carefully consider them, or else you would be misled.
33403. Q. Are you aware that the evidence of the surveyors who took measurements and made plans of the mine is to the effect that everything was travelling up, and that there were no indications whatever of flame above the 4th shaft? I will read the evidence—
- Q. Our conclusion which you arrive at is, from that part of No. 1 heading, opposite the 4th shaft, up to the 4th shaft, everything was travelling up, and all the signs of flame were below? A. All the evidence I got between the 4th and 5th shafts was that the fire travelled up.
- How does that fit in with your theory? A. I did not say that the motion was so strong as to remove ships and everything. What I want to try to explain is this—[interrupted].
33404. Q. I want you to answer the question. You think there is no motion on this point. You have raised my curiosity by your theory. How do you account for the fact that the flame drove all the objects up, and came of them up? A. I do not go to the extent of saying that the motion was so powerful as to make an actual vacuum, but momentarily there was a vacuum.
33405. Q. How were all these things driven up? A. I would like to know a good many things too. I would like to know how those in the same mine came above us.
33406. Mr. Robertson. Q. Did you not say that a vacuum was created? A. For a moment.
33407. Q. I understand that the vacuum permitted the escape of gas from the mine? A. I will give you an explanation of what I mean by the momentary vacuum. We all know that, in a mine, if you fire a shot, the shot will put the 4th out, even without a column of air. It will strike you on the head as if you were actually struck—that is, if you are in close vicinity to the shot. I am assuming that something like that occurred. It was positively a vacuum—no comparison to anything in England? A. Yes.
33408. Q. I do not see the resemblance between vacuum and a vacuum arising from sudden shock? Q. In creating a vacuum—sudden shock creates a vacuum.
33409. Mr. Brown. Q. You have arrived at your opinion irrespective of the document No. 11? A. Yes.
33410. Q. Do you read mining literature from time to time? A. Occasionally.
33411. Q. You have read some reports relating to the different explosions in England? A. Yes.
33412. Q. Do you not know that one of the best things to be studied is the direction of force, as indicated by the objects in a mine? A. I have some points of difference on that question.
33413. Q. I am talking of the reports who investigate these matters. Do they not look to the direction of the force to show them the matter? A. There is a difference of opinion about that.
33414. Q. Tell me about it? A. As to the reliability of that evidence.
33415. Q. Do you differ yourself? A. Yes.
33416. Q. What is the first thing you look for? A. I look for heat first.
33417. Q. After the explosion is over? A. Yes, as much as before.
33418. Q. How would you look for heat? A. By going into the mine to see the results of flame.



Witness—J. C. Brown, a Month, 1934.

- 21412 Q You saw the effect of force. How would you determine where the explosion originated? A I suppose the different circumstances would guide me.
- 21413 Q How would you determine where the thing took place? A By the position of the man.
- 21415 Q The man would not change its position? A I mean the seat of the explosion.
- 21416 Q How would you get at the seat? A By the examination of the position.
- 21417 Q The position of what? A I would look at over the man.
- 21418 Q What at? A The face.
- 21419 Q Would you expect the face to change three position? A I mean the appearance of the head and the face.
- 21420 Q Would that tell you where the thing originated? A It might.
- 21421 Q Would you expect all indications of force? A No.
- 21422 Q Why did you not remember them here? A I have.
- 21423 Q You did not know of them? A I did.
- 21424 Q Did you not tell the Commission that the force was going outwards between the 4th and 5th Right? A I say there is no force outwards, but I say that there was—[interrupted].
- 21425 Q "Outwards," are your own words. You cannot give me any indication of things being driven where? A No.
- 21426 Q You do not think it of much importance? A The damage in that particular part is very little.
- 21427 Q I am talking of the evidence of the direction of force? A In some cases they might be of importance.
- 21428 Q In this case, what do you think? A In this case I am a little bit doubtful. I am trying to connect the force on the ship going out.
- 21429 Q How do you know there was force going out from the 4th Right? A I could see the effects.
- 21430 Q On what? A On the man.
- 21431 Q The head does not move? A On the elbow, the prop, and things of that kind.
- 21432 Q Do you think that important? A Yes.
- 21433 Q That is what you rely on. You saw force that went outwards? [No answer.]
- 21434 Q That is what you relied on—you say that force went outwards from the 4th Right? A Yes.
- 21435 Q And yet you see a whole lot of objects down aisle, and ride you square there? A Not exactly.
- 21436 Q How you concluded them so? A I say that these things may have been moved about by the force. It is an ordinary rope system. If they went up the track, how do you account for it? A I do not say I account for it.
- 21437 Q You take no account of it? A No, I do not say that.
- 21438 Q Do you not know that Mr. Gaultney gave evidence that the whole of the force went inwards? A No.
- 21439 Q Would that have any effect on your evidence theory? A I do not know.
- 21440 Q You told me that the gas in the coal was forced out simultaneously with the road dust. How do you think it was lighted? A I think outwards. The gas exuded from the face of the man, and came across a light.
- 21441 Q You have a light now—you have gas, coal dust, air, and a light? A Yes.

Re-examined by Mr. Wolfe:—

- 21452 Q When you were going through Mount Kennedy where the disaster, did you try for gas yourself in places besides the 4th Right? A Yes. I think we tried over a portion of the left on the left of No. 1.
- 21453 Q We used these but could not find any gas.
- 21454 A Mr. Ziskind: Q What lamp did you use? A The ordinary safety lamp.
- 21455 A Mr. Wolfe: Q You said there might be an explosion at your near Ashkin's place? A Somewhere in that vicinity, there was heat there.
- 21456 Q Would there not also be signs of force? A It is an open question. There would not be much force.
- 21457 Q What I want to know is this—the signs of force from No. 1 read at Ashkin's place were all going inwards. Would you expect to find these signs, if there had been an explosion at the end of the passage where Ashkin's place was? A The only signs of force are near where the explosion may have occurred at Ashkin's place.
- 21458 Q Would you expect to find force going towards No. 1 read? [Witness looked at plan, Exhibit No. 35.] A It would depend on the back road.
- 21459 Q Would you expect to find signs of force going towards the main road? The back road may have developed other signs of force.
- 21460 Q If you have force on one side of the props, how could force going on the other side of the props destroy the signs of that force? A I do not remember seeing anything on the props; but I saw some slightly skewed out on the ribs.
- 21461 A Mr. Wolfe: Q Look at plan [Exhibit No. 35]. If the indications of force shown by that plan are correct, would that be consistent with an explosion starting at Ashkin's place? A Not very readily. I cannot say that that is so.
- 21462 Q If the explosion started at Ashkin's place would you expect to find signs of force going towards the main road? A The force radiates all round, and I should expect to see signs of force all round.
- 21463 Q There is only one way to the main road? A Yes.
- 21464 Q If there was an explosion at Ashkin's place, would you expect the force to go towards the main road? A Yes, the first effect would be along that way.
- 21465 Q Would you expect, when you come to examine the mine, to find indications of force from Ashkin's place in the main road? A I would look for them.
- 21466 Q Would you not be surprised to find the force going towards Ashkin's place, if it went the other way? A The first effect would be forward—there is no doubt about that.
- 21467 Q You spoke about some shots, the result being that they blew out stoppings. Have you had any actual experience of it? A Often.
- 21468 Q Under what circumstances? A After we have had a shot at the face, it would knock the stoppings out of the second cut through from the face.



23458. *Mr. Richardson* Q What sort of shoppings were they? A. Dumb shoppings. I have seen them knocked down in Louisiana, California, we could not build them over the bars. They were 4½ inch work.
23459. *Mr. Anderson* Q How far would they be from the jail? A. Forty or 50 yards.
23460. *Mr. Anderson* Have you had any experience of looking at the Southern soldiers? A. I always keep the best shoppings back now, for fear of the same thing occurring. Of course, everything depends on the shape in the shot. If it is a heavy shot, especially to make or anything of that kind, it will do it.
23471. *Mr. Moore* Q These brick shoppings are simply built up and are not let into the sides of the ribs at all? A. They are simply built up and are not let into the sides at all, but they are made or right.
23472. *Mr. Wade* Q Do you know whether a large or a small quantity of coal dust will propagate a dust explosion, will a small quantity? A. The theory is that with a strong flame an explosion will take place.
23473. Q I am talking about dust—will a small quantity tend to propagate an explosion—suppose there was a short full started up? A. Certainly not. Your experiment requires a large quantity, so much that no one could breathe in it.
23474. Q If you get the air thick with dust, and the compression from a gas explosion moved up with it, do you think that would be sufficient to bring about the distillation of the dust and lead to an explosion? A. I think so.
23475. Q Would it require very much dust? A. The least amount would, very probably be 1 lb. of dust for every 100 cubic feet of air.
23476. Q If a short full of dust was in suspension in the air, it would do it? A. Yes.
23477. Q Then the very mean is to sweep your mine with a beam every day? A. Yes, clean it up; and by this the dust would make it dirty again.
23478. Q Did you follow Dr. Wade's evidence as to the request to get the effect of his theory? A. Yes.
23479. *Mr. Langford* I object to that question.
23480. *Mr. Moore* I do not see how the witness can answer Dr. Wade's evidence.
23481. *Mr. Wade* The witness got to the witness on half of Dr. Wade's evidence.
23482. *Mr. Moore* The witness said that the witness believed in the doctor's evidence was that because the man was in the room when the doctors answered the bodies, and they did not seem to pay much attention to them.
23483. *Mr. Wade* Dr. Wade at the request said:—"My principal reason for thinking so was the burnt hair and the curling up of the outer skin, especially about the exposed parts."
23484. *Mr. Moore* The witness did not set up his theory as against that of the doctors.
23485. *Mr. Wade* I want to ask the witness about what Dr. Wade said concerning Clark. He says:—"My inquiry does not enable me to answer positively whether Clark's hair was singed, I took as some of the case."
23486. Q The one part of the evidence which Mr. Langford read out was that Clark was burnt.
23487. Q Were you in the shed when the doctors came in? A. I was there on several occasions. I was there when the first body came out. Dr. Lee was there at the time. He made an examination; but he simply looked to see whether a man was dead or alive. All the men were black.
23488. Q If a man was alive he was taken one way, and if he was dead he was taken another? A. Yes, that was all the examination that was made.
23489. Q Did you see Dr. Egan and Dr. Nash there? A. I was in the room. I saw them come there; but I did not stop.
23490. *Mr. Anderson* Q Were not the doctors able to make an examination when you were not there? A. Certainly.
23491. Q And when your son was there? A. I think my son was there eight and day.
23492. Q When did he go there? A. At 4 o'clock on the same day.
23493. *Mr. Langford* Q Are you aware that Dr. Nash stated this to the evidence at the inquest?—
- "The bodies were in the bodies collected to see that some of them in a very high temperature had rapidly passed over the skin. . . . all the bodies that I saw were produced by some cause of a very high temperature passing across the body rapidly."
- [It is correct.]
23494. *Mr. Anderson* I only say that I examined all the bodies myself and I do not know whether Mr. Jones was there.

Examined by Mr. Richardson —

23494. Q You have given me two theories to account for the deaths. The first was that a great blast of air escaped from the 14th Right with such force, and at such a temperature, as to ignite the dust? A. Persons would increase the temperature.
23495. Q You say that it is not at such a temperature as to ignite the dust? A. Not to ignite it, but to heat it.
23496. Q If it was not ignited, how do you get the after damp? A. I do not say there was no ignition. I do not know how it was ignited.
23497. Q Do you not think that ignition did take place, because there was after damp present? A. Yes.
23498. Q Another theory was that a blast issued from the 14th Right, causing a general current, and during this time gas was released from the road and ignited? A. Yes.
23499. Q Which of these theories do you adopt? A. I am speaking of possibilities.
23500. Q Do you give them as alternatives? A. Yes. You must remember the cause of the fire at Currier. There may be gas coming out of the face. I only get them forward as possibilities, I am not putting them forward to work them out.
23501. Q Have you any preference for either of them? A. I could not get evidence to show it. I may say that I noticed a kind of stain of after damp around the main tunnel. There would not be enough after-damp to kill a man, unless he was in one particular district there. One man came out of the tunnel two hours after it occurred practically unscathed.
23502. Q That is not an answer to my question. I asked which theory you would prefer to give me? A. If I were to say which theory I preferred, I should have to explain why. That is the trouble. I cannot possibly say, I can only give you possibilities.
23503. Q Coming to this first theory by which you calculate to get this high temperature by means of a blast of 160 miles an hour. Your data for that is the period of time—a second for the stroke of the piston? A. Yes.
23504. Q And the area a quarter of an acre? A. Yes.



Foster—J. E. Jones &amp; Marsh, 1990

23485. Q Did you compare notes with Mr. Sellers? A Yes. I have seen part of his evidence; but I did

23569. Q It is apparent, however, that you both arrive at the same velocity from totally different data!

21567 Q Mr. Sedler answered double your pot, space and only half a second, and he says that, if the pot had been increased from half a second to three quarters, the temperature would have fallen to 94 degrees. You take a second, and have only half the size for the pot? A And I think the coffee is different.

Q The width was the same? A We did not measure them. I took it to be ten by five, the width ten and the length five.

55009. Q: You arrived in the same velocity from totally different data? A: It is not the same velocity, since in T82 we are in brown.

35110. Q. Mr. Bellows takes the crane opening—the opening is the crane for both? A. Perhaps Mr. Bellows took his opening as twelve by six.

He takes 44 yards more; which is a great difference! [No answer.]

235013. *Mr. Roberts*. Q Do you remember whether the carload from No. 4 High was at all with A. I.

23516. O. There is a lot of evidence that it is widely ; I take it that there could not be much doubt . A. No,

in that place there is not very much. You could not see the water, it was covered over with dirt; but if you went to walk on it you would slip in.

33415. Q. You said that you did not encounter Karsch's a gassy mine? A. I certainly never did.

33416. Q. There has been no definition of a gassy mine? A. I do not know it.

53017 Q. Do you not think there ought to be a definition? A. I should not be surprised that there will be some day. We also ought to have the term dry and dirty defined. Every wine is more or less dry and

23018 Q: How may we assess the danger arising from coal dust and Ore dungs, and yet be of a different

mine? A: I would define a gassy mine as a mine with gas—<sup>1</sup>you can detect the gas

130.00. Mr. Aukus | Q. For how long? A. If it is constantly needed.

29501 Q We have heard that Bonville was a safe house, and that it was free from gas, and yet we have

23539 Q In view of what has occurred at Kamble, would you suggest the desirability of designating each

Q If a name is designated a generic name, would you suggest that it should be worked with solely within the generic name? *Ans.* Yes, you can call them such and introduce safety lamps.

lamp. A Undoubtedly. In fact we are finding out so much about means nowadays that, whether a man gives off gas or no, we shall have to use safety lamps. Undoubtedly it does not require gas to cause an

35228 Q How not that Krasia explosion been a eye opener to many men, experts in mining, who probably

hold the opinion that such a case should not be worked with safety loops? A. Yes  
 20206 Q. It is not a reference on each man that that occurrence has caused them to alter their opinion  
 of a safety loop? A. It is the only way people do alter their opinion; it is only by actual experience th

Q And I should say not. It is the only way people do share their opinion—It is only by actual experience that you can gain such knowledge.

29007. Q Do you consider that gunpowder is a safe explosive to use in mines giving off gas? A Yes, a little bit. But from all I have read there is scarcely any explosive which is safe in a very close mine. Q Some of the others have a considerable degree of safety? A Yes. I would like to see much of it.

000005 Q These of the others have a comparative degree of safety? A Yes. I would not see even the explosive grandfathered here. You cannot obtain them here now.

20529 Q I have got this for years? A We could not get them. There is some talk of a new manufacturing such employees. I wish they did.

21530 Q Do you think that the firing of shots should be taken up? At the 20,000 or 25,000 ft. level?  
 21531 A Yes, because it should be.

31232 Q Under what conditions? A When there is no  
31233 Q Or where a mine is dry and dusty? A Yes.  
31234 Q Would you allow miners to feel shots only when a mine is naturally wet and free from gas?

21230 Q. Would you also require to see photos of when a letter is actually sent and received?  
A. Yes.

21231 Q. Do you approve of demands and short-cuts having to obtain certification of competency? A. D.

15035 © the commissioner It has been suggested that they should obtain them in the same way as

Manager? A: I think it would be undesirable. I do not think the ordinary working man ought to pass an examination. They ought to be asked to the Manager for appointment.

1/10.30. 4/ The world has the best knowledge of their qualifications. 1. No one more than the Manager. He takes good care to get competent men to do the work, for his own sake and for the good of the Company.

23047 G The Manager when appointing a deputy has to consider his own interests? A Yes

preconceived notion. The fact of a man holding a certificate may mislead some Negroes. A man may be a perfectly earnest man, and yet hold a certificate. It requires more than a certificate to fit a man for a

35836. © Do you think there is a fair of men with an aptitude for such knowledge posing as a mathematician?

but not having the necessary practical knowledge!  $\Delta$ . There is. There are plenty passing now who have no practical knowledge.

23540 Q It has been suggested that ventilation by furnace should be prohibited and fans sufficient. A It goes without saying that fan ventilation is better than furnace ventilation, but I do not think



should be made compulsory for a mine to do away with the furnace. A mine might do away with the furnace, and put in a fan that is inefficient. A good furnace is better than a defective fan.

25543. Q. It is all a matter of power. Are not furnaces gradually giving out? A. Yes, furnaces are gradually giving way—they are more expensive than fans.

25543. Q. Do a previous right work a good deal of headings to small ones? A. That is so.

25543. Q. Do you approve of waste workings being sealed off? A. Certainly not.

25544. A. What is your view? A. A Mining Manager will work his pit so that the return airways will be always starting round the waste workings, but in the old mine we cannot do that. You cannot possibly seal up the waste workings.

25545. Q. Is it good practice to surround them with return airways? A. Yes.

25546. Q. Would you approve of a person being made in a new Mining Act providing for that, and also forbidding waste workings to come into contact with the intake? A. I would leave the matter of arrangement open to the Manager.

25547. Would you leave the water open to the intake? A. No. The matter should be left to the Manager and to the Inspector to arrange. It might be hard to work to any agreed rule on the subject.

25548. Q. There ought to be an inside along making waste workings so that they will not come into contact with the intake, but with the return airways? A. There may be exceptional cases even for that.

25549. Q. Is it undesirable that waste workings should be in contact with the intake airways? A. They should not be in contact with the intake airways.

25550. Q. There is a proposal that air through should be only 30 yards apart? A. That is absurd, in all mine.

25551. Q. Is that case would a Manager be liable in the case of the pillars—to 30 yards? A. Yes, it would not be otherwise. You limit the size of the pillars.

25552. Q. Should there be any limitation to the size of pillars? A. Certainly not.

25553. Q. Is the tendency to increase the size of pillars? A. Yes, in the more recent coal, Managers are generally increasing the size of the pillars. A good deal depends on the experienced, that is. You could not work some mines with pillars through at 30 yards distance. It would be practically impossible.

25554. Q. The suggestion is made to improve the ventilation conditions. If adequate ventilation is provided at the working face, do you consider that most all requirements? A. Of course it does. Take a pillar of 10 yards length between two headings—you would have to breathe for 10 yards in that case.

25555. Q. If you have sufficient ventilating power to give ventilation in a head, is that sufficient? A. Yes, and with proper leaktight that can be done—no man has been having two headings.

25556. Q. Have you had any experience of dealing with the hydrogen flame? A. I have seen it with the explosion, but I have not got one.

25557. Q. Do you think it is a proper lamp to place in the heads of deposits? A. No.

25558. Q. Do you think there is danger with it? A. Yes.

25559. Q. Do you know how long it takes to make a hole? A. It takes a good many minutes.

25560. Q. How many men could you make with an ordinary lamp, when you were making one with the hydrogen lamp? A. Five or six, at least.

25561. Q. You approve of double doors, of course? A. Yes.

25562. Q. Do you approve of an extra supply of safety lamps being kept at a mine in case of accidents? A. I think so.

25563. Q. Do you see any difficulties in the way of watering travelling and haulage roads? A. A good deal.

25564. Q. Mention some? A. There is no water in the first place.

25565. Q. First catch your water. The great length of roads would make the difficulty very great. It would get very muddy with travelling, and you would have to take up the mud.

25566. Q. It would involve passing a mine, and putting holes there? A. Yes.

25567. Q. Would that be a serious first one, and the cost for stopping afterwards? A. Yes, it would be a serious one.

25568. Q. Water has a great effect on the floor? A. It has a great effect on the floor—men, and on some roads too.

25569. Q. Do you consider that the watering of roadways is of any practical value when it is done thoroughly? A. Not unless the mine is kept done, with a view of preventing dust being raised at all, otherwise it would be of no value.

25570. Q. Did you observe that the explosion at Mount Kentucky passed many lengths of wet road? A. No.

25571. Q. You know the tunnel north there—the tunnel north to No. 1 junction? A. Yes.

25572. Q. Is that wet? A. Yes.

25573. Q. The explosion passed that? A. I suppose so.

25574. Q. Even if the travelling and haulage roads were watered, do you not think there are many mines in which sufficient dust is in suspension in the air to carry on an explosion? A. I have no doubt there are in the old South Wales coal mines. I have seen enough dust to make you a mine.

25575. Q. The air is very dark, probably sufficient to cause an explosion? A. Yes.

25576. Q. The air is very dark, probably sufficient to cause an explosion? A. Yes.

25577. Q. Now, taking it generally speaking, the systematic watering of a large colliery is impracticable? A. I think it is quite impracticable to do it thoroughly, as it should be done.

25578. Q. It has been suggested that Managers should give more time to the management of their colliery. Do you find your time fully occupied? A. Yes.

25579. Q. Have you any time for finding coal? A. I think this it depends on circumstances. If circumstances prevent a man attending fully to the mine, there should be another man appointed.

25580. Q. I take it that some people think that a Manager is not doing his duty unless he is working all over the mine all day long. Do you think that a Manager can do more effective work while sitting down and discussing old problems? A. He has to do it often. Other officials are appointed to look after the mine.

25581. Q. What is the good of having instruments at the bottom of the shaft to determine the temperature of the air? A. I do not know. My experience is that the temperature never shows anything through artificial means.

25582. Q. What is your idea about suspending men in the mines of traps? A. Have travelling roads.



Wheat—J. G. Jones, 4 March, 1902.

- 23243 Q To how long supposed that the man should be told of the means of escape? A. Nine feet out the mouth of and very quickly.
- 23244 Q To an explosion it is all a time up which way you are going is a mine? I do not think it is possible to leave the men all the means of escape.
- 23245 A Do you know anything about a black list? A. I used to keep a black book.
- 23246 Q What did you keep in the black book? A. All the black-and-white with the men—names, warnings, demands, or fines. The black list which you refer to I have never heard of.
- 23247 Q Have you ever known of any black list, with a view of preventing men obtaining employment at other collieries? A. That is now at all.
- 23248 Q Have you ever heard of it? A. Never.

Examined by Mr. Stabile —

- 23249 Q Have you ever had any regrets about the character or workings of any applicant for work? A. Oh, sometimes, if I have wanted a man specially, if I did not know him personally I would write to the manager to come face and ask about his character. It is seldom that now, because men are plentiful.
- 23250 Q Where you ever had word from a manager not to employ so-and-so, because he was a strong union man? A. Not word of that kind.
- 23251 Q You never did? A. I do not remember one instance. Of course we know the character of the men ourselves, without being told.
- 23252 Q You know whether they are union men or not? A. We know their character. We never inquire whether they are union men or not.
- 23253 How many times did information in other managers warning them not to employ certain individuals? A. I do not remember one case.
- 23254 Q Have you ever yourself given work provisionally to a person who applied for it, and then asked him to get a reference from a manager? A. That is what I would do, if I had any doubts in the matter.
- 23255 Q You do not generally adopt such a course? A. No.
- 23256 Q You have done it? A. I cannot say, but it is one of the things I would do if I had any doubts about a man's character.
- 23257 Q Do you believe in keeping a blacklist at all—do you believe that you should be posted freely by, and noted of, all the men who have a prominent part in union matters? A. I keep a list of the weaknesses of men, but not whether they belong to unions or not.
- 23258 Q Would you reject any person whom you had in your employ, or whom any other adjoining manager had in his employ, on assuming if he brought forward grievances? A. No. If a man is nervous, or does not without his spring, or works they cost out, I think one of it should be made.
- 23259 Q The only thing is to quite delete in regard to workmanhood? A. That is the object of it.
- 23260 Mr. Stabile. Q On his general character? A. His general character, of course.
- 23261 Mr. Stabile. A. How often are you in the mine yourself? A. I could not say—probably three or four times a week.
- 23262 Q Are your visits in any way systematic? A. It depends on the object for which I visit. As a general rule, I take one district on each visit.
- 23263 Q That takes you how long? A. Three or four hours; every visit. I go in and measure the work of the men all round every district.
- 23264 Q You are in two or three times a week? A. Yes, I make it a promise to go in as often as I can.
- 23265 We have now work going on, and it takes me no more than the general work of the mine.
- 23266 Q Have you a way of examining all the waste workings? A. We examine all the waste workings we can get into every week.
- 23267 Q Do you ever take it on yourself to examine the work of the examining parties, and one of them they do go in to examine the waste? A. Yes. I have been all round myself in every possible part. I have been in the mine following a deputy in the early morning without his knowledge at all.
- 23268 Q Do the deputies leave an impression, giving their initials and the date of their visit? A. They do make a large slab of rock or coal. They put the date and their initials, and they also make reports.
- 23269 Q You examine the date, and see that the deputies have been there? A. Yes.
- 23270 Q What means would it be impossible to work if there were not through 30 yards apart? A. What I say is that you would then have more length of air through the line of workings.
- 23271 Q Did you not say that it would be impossible to work certain mines with these counterthrusts? A. I do not say impossible, but impracticable.
- 23272 Q You say it is impracticable to have not through 30 yards apart? A. In all deep mines.
- 23273 Q Where do you call deep? A. Mines like the Hallowburgh Mine or the Dalton Mine. They will have to have 100 yards pillars there. We can work with 30 yards pillars, but there would be no benefit in it. It would be impracticable and unprofitable in many cases.
- 23274 Q With the exception of this—the two mines you have mentioned—it would be quite practicable? A. Yes. But it would add to the cost considerably.
- 23275 Q With regard to the examination of the deputies, you say that the Manager is the most competent person to judge of the deputies and check them? A. Yes.
- 23276 Q Would the fact of these men having to qualify before witnesses at all interfere with your discretion? A. It would not interfere with a manager's discretion, but it is possible that the Manager might take the fact of a man's having passed on examination into consideration, and check that he was competent, and employ him, without making a fresh examination for himself.
- 23277 Q If you regard the post as an important one, would you not put a person to some examination or through some code of your own? A. I know what I should do myself.
- 23278 Q The fact of a man's having a certificate would not interfere with your discretion? A. I say that such matters might make an error in the way I have stated.
- 23279 Q Do you think our manager would do so? A. Perhaps, but it is not likely.
- 23280 Q Then there is nothing in the answer that managers might be let on their duty when making such examinations? (No answer.)
- 23281 Mr. Stabile. Q Would your choice of men be limited? A. Yes.
- 23282 Mr. Stabile. Q Would not that depend on the examination which they went through? A. Yes.



23632. Q. If the examination was not quite so strict as that for a second class certificate, probably you would have a good number of persons put? A. Yes.
23633. Q. Is your sheet limited in its that you have to appoint in competent persons? A. It is not limited as far.
23634. Q. As under manager or shot-fire? A. No.
23635. Q. You have a good number of them? A. Yes.
23636. Q. Of competent persons? A. I want to say.
23637. Q. You would have as difficulty in selecting officials if they held certificates? A. There are a good many managers who hold certificates of service.
23638. Q. Your under-manager is one of those? A. Yes.
23639. Q. And you have an assistant with a first class certificate? A. Yes.
23640. Q. You thought that necessary for the safety of the mine? A. The under manager is an aged man, and the mine is a big one.
23641. Q. You thought it well to put on a man with a first-class certificate? A. He was the mine before he got his certificate.
23642. Q. Not an under manager? A. He is assistant to the under manager.
23643. Q. You have told us that the miners are duly instructed to report all cases of gas. Do they report all? A. Frequently, at all events.
23644. Q. Who not? A. The deputies.
23645. Q. Do they report that? A. Yes.
23646. Q. You tell us that a mine should be deserted as being gaseous if it gives off a perceptible quantity of gas below? A. Yes.
23647. Q. When you talk of the miners who saw gas, the gas was not seen by the deputies? A. No. It was an explosion after firing a shot.
23648. Q. They were not all cases of ignition after firing shots? A. I believe in nearly all cases out of a hundred they were.
23649. Q. Have you had those many shots fired which did not complete their work, to give you as many reports as that? A. I think not. I do not know whether it is a failure of the work—but there is the fact that the men report gas and the deputies cannot find it.
23650. Q. You say that it is only found if a shot has not done its work properly? A. Yes.
23651. [Mr. Robinson.] Q. Are there all reports where shots have been fired? A. Nearly nine out of a hundred are.
23652. Q. Have you had reports in other cases? A. Yes, a deputy has reported that he found a leak of gas.
23653. [Mr. Steele.] Q. How many reports would you have before you declare the mine to be a gaseous one? A. That would depend on circumstances.
23654. Q. You mean, if you take a safety lamp and see gas in and detect it? A. I think, when anybody sees gas in and detects it.
23655. Q. We have had a mine put forward where a mine is always giving off gas? A. I have said that, if a mine is giving off gas, but if it is not perceptible, it is not gaseous. I think a good deal should depend on the nature of the reports of the deputies.
23656. Q. Supposing you find that a deputy has reported gas in a heading, would you regard that as sufficient? A. Certainly not. I would not call that gaseous. It should be found in more than one place.
23657. Q. How many places? A. I cannot say a small mine would be different from a large one.
23658. Q. You have said that you would have a gassy mine if it were giving off a certain quantity of gas constantly. I want to know what that quantity is? A. If the examining deputies report it, I do not think it should be looked upon as a gassy mine, if the gas was only found in one particular heading—you might find it in a prospecting heading.
23659. Q. You see, if the Commission think fit to make a recommendation as to gassy mines, they want to know what managers themselves think should be called gassy mines? A. It is one of those cases which it is hard to define.
23660. Q. Have the managers defined it? A. The definition in the English Act is, if the gas is detected in the previous three months.
23661. Q. You have told us there should be a definition. Can you limit the period or the number of times? Do you say daily? A. I do not see how I can.
23662. Q. You think that it is sufficient, if gas is found constantly, that it should be declared a gassy mine? A. Yes.
23663. Q. You do not define it any more? A. No.
23664. Q. I will now take you back to Atkin's place. You gave an opinion that an explosion of gas took place there, and it answers to Mr. Wade's account some what confused as to the evidence of facts. Did you suggest that a second explosion may have taken place and obliterated the signs of the first going on? The witnesses of facts described by Mr. Wade pointed to a westerly direction, but you think a second explosion took place? A. That has occurred, where an explosion of gas has been sufficient to be seen another explosion.
23665. Q. You think that an explosion took place at Atkin's place which probably left evidence of there is an easterly direction, but a subsequent explosion took place which obliterated the marks of the first one? A. I said that something like that may have occurred.
23666. Q. Do you think it occurred? A. I cannot say.
23667. Q. You have an opinion beyond that. You think an explosion occurred at Atkin's place? A. Yes, about there.
23668. Q. Do you know there are evidences of harring in the back heading? A. No; I saw it in the front heading.
23669. Q. Did you see the canvas? A. Yes, a large portion of the battens was charred, but all the rest was untouched.
23670. Q. Did you notice any evidence of rocking on the side? A. Only in the front heading.
23671. Q. Do you think there was there where you saw the canvas? A. I think there was, in the front heading, where the battens were.



Witness—J. L. M. Robertson, 1 March 1908

JAMES ROBERT MILLAR ROBERTSON was sworn, and examined as under—

Examination is chief by Mr. Wade.

- 23483 Q What is your name? A James Robert Miller Robertson  
23484 Q What are you by profession? A A mining engineer.  
23485 Q How long have you been in New South Wales? A Twenty-two years.  
23486 Q Have you been engaged in mining all that time? A Yes.  
23487 Q What experience did you have before you came out here? A About the same experience.  
23488 Q Before you came out here? A I was fully fifteen years mining in Wales.  
23489 Q Have you held positions on Royal Commissions in this country? A Yes, on two—the Ball's Commission and one at Llanfyllen.  
23490 Q Were you chairman? A Yes.  
23491 Q How long have you known Mount Kembla Colliery? A More or less, I have known it for about twenty years. I have been connected with it for about eighteen years.  
23492 Q Have you known it from the date it was first opened up? A I have known it since it has been less opened up. It was opened up by reason of suggestion of mine, when I was out here on a visit.  
23493 Q How long has Mr. Rogers been at Kembla? A I think to date or thirteen years.  
23494 Q What was his position. First of all? A Under-manager.  
23495 Q Did you know him before he came there? A I have known him since 1874.  
23496 Q Did he work under you? A He came out to Greta after my brother came to Greta. He was under-manager of my brother in Wales. After that he went to large collieries, outside Glamorgan, belonging to the Carmarthen Company.  
23497 Q Do you know how those mines were worked in Scotland or in Wales? Were they worked with adfry-lamps? A Yes. When he was in Wales—and I think that the Carmarthen Company also worked with adfry-lamps.  
23498 Q Have you been at the Mount Kembla Mine from time to time as long as he has been there? A Yes. At irregular, but pretty frequent intervals or visits.  
23499 Q I suppose you have had an opportunity of seeing the way the mine was managed and carried on? A Yes.  
23500 Q You have got the radfry-rig method? A That was introduced as soon as Mr. Rogers took full charge.  
23501 Q How long has it been there? A Probably seven or eight years. I think it was introduced with Mr. Rogers.  
23502 Q Can you say whether the output has risen during the last few years? A The capabilities of the mine have really increased since Mr. Rogers took charge, and the output has been steadily and greater as well.  
23503 Q The year before last you did good work? A The southern train has not been a regular train, and it is only since that large new line of tunnels came here that it gives a manager a chance of going on with steady work.  
23504 Q Apart from the defects caused by shipping are there other defects in the way of keeping up the output? A Kembla is surrounded with physical difficulties. During the wet weather which we had several years ago the difficulties were simply insurmountable. For two or three years there were occasional floods, and thousands of tons of spoil and debris were washed down; and in one case a rail was washed away at the rate of 20 inches per day, and we had to put piles there, 60 feet long, on one side of the line, and 52 feet on the other.  
23505 Q Is not this a serious inconvenience? A Yes.  
23506 Q If there are certain defects connected with the output, and if a good output has been maintained, this has not been done by mismanagement but by good management.  
23507 Q Is it only indirectly relevant, that is all? It is only a question of time.  
23508 Q What time? A What time?  
23509 Q We do not want to take more evidence than is of use to the Commission.  
23510 Q It has been suggested that the mine was starved? A I could show that there is a good output, and that it was not done without skill on the part of the management, and that a good deal of money was spent on the mine, that should be of value to the Commission.  
23511 Q We know. I think you might mention yourself in connection having relation to the safety of the mine, as far as possible.  
23512 Q Yes. There has been any shuffling of money for the carrying on of the mine in a safe and proper manner? A There has been no state of money. There is not a single lack of 644 Kembla remaining which has not been remedied.  
23513 Q Do you remember when the new furnace was put in? A Yes, very soon after Mr. Hamilton and Mr. Rogers went to Kembla—about twelve or thirteen years ago. A number of complications were discovered at the time, and we thought that we would start a new furnace with the new management. Very soon after they came we started thinking.  
23514 Q You know of Gough's being killed? A I do not know of the matter.  
23515 Q During your consultation with Kembla, up to the 31st of July last, had you ever heard of gas being found in the mine? A Never.  
23516 Q Have you any reason to believe it was what is called a gassy mine? A Oh, no, the very contrary.  
23517 Q With regard to dryness and dustiness? What do you say about that? A It was neither a dry nor a dusty mine. In ordinary weather it was rather a wet mine. The rocks were wet, especially in No. 1 Right.



15708. Q Where did the water come from? A It came from the roof, whereas had fallen after taking out the pillars.

15709. Q Is what desired? A There was a great deal of surface water from the ceiling, and large quantities of water came down at the shaft bottom. That was stopped by Mr. Rogers stopping a succession of mine, then, instead of taking out single pillars, he should take them out in pairs or triads and then possibly the superincumbent strata would settle gradually. It evidently had the effect, because we were never troubled with water afterwards.

15710. Q Are you including the 10th Right? A Then, between the ceiling and No. 1.

15711. Q Since you had any apprehensions of coming from there to take the mine the roof came down? A I have frequently seen the way the roof had fallen. I have never heard of any difficulty in getting it down, and this very last event.

15712. Q Just suppose that gas had been in the 10th Right—what would be the likelihood of finding it after the place had been worked for three years and the pillars taken out? A You are asking me to assume something which I know not to be the case. I know there has never been gas found in the 10th Right; I should have to assume something that is not a fact.

15713. Q Would it have drained away? A Yes, I think so.

15714. The superincumbent strata there do not contain gas, it is mostly all sandstone strata. Including a shaft 495 feet at 410 feet we only found 3 or 4 feet of shale. The rest was sandstone and conglomerate, which gives off no gas. In some of the falls from the pillars being taken out has gas been given off. They are not strata that contain gas.

(The Commission, at 4 p.m., adjourned until 10 o'clock the following day).

WEDNESDAY, 5 MARCH, 1903, 10 a.m.

[The Commission met at the Supreme Court, King street, Sydney.]

# Present:

C. E. H. MURRAY, Esq., D.C.J. (PRESIDENT).

D. A. W. ROBERTSON, Esq., COMMISSIONER. | D. RITCHIE, Esq., COMMISSIONER.

Mr Bruce Smith, Barrister at Law, instructed by Mr. Wade, Crown Solicitor's Office, appeared on behalf of the Crown.

Mr A. A. Addison, Chief Inspector of Coal mines, assisted Mr Bruce Smith.

Mr A. A. Lough, Solicitor, appeared on behalf of—

- (a) the representatives of deceased miners, whereas, do (relatives of the explosion),
- (b) the employees of the Mount Kembla Colliery Company, whereas, do; and
- (c) the Mount Kembla Colliery Employees' Association (the Southern Mines' Union).

Mr C. G. Wade, Barrister at Law, instructed by Messrs. Carter and Barry, Solicitors, was present on behalf of the Mount Kembla Coal and Oil Company (Proprietors of the Mount Kembla Mine).

(Mr J. Garlick, Secretary to the Commission, was present to take shorthand notes of the evidence and proceedings.)

Dr J. E. M. DOUGHERTSON, previously sworn, was further examined as a witness—

Examination in chief by Mr Wade—

15715. Q There is one other question I want to ask you with regard to the dampness of Mount Kembla Mine—did you have any communication from Mr. Howe with regard to that matter just before he left? A Yes, Mr. Howe spoke to me in the train before he left, and stated that he had been having a lengthy examination of the mine, and found everything in a very satisfactory state, but, if I would speak to Mr. Rogers to-day No. 1, he thought it would be an improvement.

15716. Q So you knew Mr. Wright? A The late under-manager?

15717. Q The late under-manager, Mr. Wright? A Perfectly well, yes.

15718. Q When was he there before Garlick went? A Yes.

15719. Q Let's see your statement? A Yes.

15720. Q He is in New Zealand now? A He went to take the management of some mines in New Zealand.

15721. Q Have you received a communication from him? A Yes, I did during the inquiry. I think before the inquiry was over, he wrote saying that he was horrified to hear—[interrupted]

15722. Q Did you receive a letter from him with regard to the condition of Mount Kembla? A Yes.

15723. Q Is that it? A Yes, I gave it to you this morning. [He refers now the book to Mr. Howe.]

15724. Mr. Bruce Smith: Presumably I do not object to this, but the principle of admitting correspondence letters received from people who are not on oath and not subject to cross-examination is a doubtful one.

15725. Mr. Howe: The value would be infinitesimal.

15726. Mr. Bruce Smith: Supposing a letter of that sort contained a direct denial of something that was in the evidence.

15727. Mr. Howe: Of course, in the usual order of things, it is not evidence.

15728. Mr. Wade: It is in the same position as Mr. Hebblethwaite's letter.

15729. Mr. Howe: But, apart from its not being legal evidence, its actual value is so small that it is practically at the vanishing point. The Commission feels confident too that the probability is that, when Wright left, he had no idea that anything like this disaster would ever happen.

15730. Mr. Wade: It is with regard to the question of gas, and the question of the dampness of the mine.

15731. Mr. Bruce Smith: I shall propose that Mr. Howe look at the letter first.

15732. Mr. Wade: I tender that letter on the same ground as Mr. Hebblethwaite's letter was tendered on. The letters are not legal evidence in either case. Mr. Bruce Smith tendered Mr. Hebblethwaite's letter to dispose of it.



Stowe—On 4 & 5 N. Robinson, 3 March, 1906

certain statements made in a paper, *The Calling Guardian*. This letter, Mr. Wright's, bears all the hallmarks of such a job. It comes from Mr. Wright, and it purports to be substantiated by a *Journal of the House*, before which it was signed. If there are not great, false indications of good faith and truthfulness, I cannot say what it is.

23125. *Mr. Bruce Smith* [Mr. Hubbard's letter was not about the Mount Kisco dinner; it was about the fall at Broken Hill South.]

23124. *Mr. Fiske* [I read Mr. Wright's letter to the Commission.]

23125. *Mr. Stowe* [Well, Mr. Wade the letter would certainly be of no value at all. We do not wish to keep anything out as purely technical grounds, say, for what it is worth, it may appear enough to us to keep anything out as purely technical grounds, say, for what it is worth, it may appear enough to us, proceedings. That is all we can say. And then Mr. Lyngdahl may ask any questions to this way to ask, proceedings. That is all we can say. (Mr. Stowe then read the letter.)

23126. *Mr. Stowe* [I read these are direct statements. We were under the impression that it was a letter, respectfully written by Mr. Wright, who had read about the expenses and wrote what came into his mind, without suggestion or without inquiry. That would have been, in the nature of things, of some little value, but these are direct answers to questions directly put, evidently by Dr. Robinson, and under these circumstances it truly seems almost improper that these answers should appear as if they were tested by an audience of them. Mr. Wright could be brought out, of course, if necessary.]

23127. *Mr. Fiske* [Yes, if the Commission were to subpoena him, we have no objection.]

23128. *Mr. Stowe* [Yes, but it is a question whether the Commission would wish to subpoena witnesses from a remote distance.]

23129. *Mr. Wade* [That is just the difficulty we are in. The Company did not care for the expense of bringing him over here. If the Commission think, from that letter, that his evidence would be of value, they might call him.]

23130. *Mr. Stowe* [We have already said that it may appear in the proceedings, but we qualify that by saying that we shall guard ourselves against giving anything in the nature of weight to this, as we would if it were anything like legal evidence.]

23131. *Mr. Bruce Smith* [Does your honor think it might appear in the proceedings, together with the evidence of a large number of witnesses. If the principle is once established, they may simply write letters to a multiplicity of people, who will not take the responsibility of the oath, and who will not subject themselves to cross-examination. These people might make statements of a very doubtful, unliking, character, which we should be quite unable to test in the usual way by cross-examination or by oath. The principle seems to me to be quite wrong. In answer to Mr. Wade, who has sought to create a parallel between this and the letter put in from Mr. Hubbard, Mr. Hubbard's letter was with regard to an accident that occurred in the Broken Hill mine, in relation to which it had been stated that men were hurt, and that letter was put in with regard to that, but not having directly upon the facts of the Mount Kisco dinner, which this Commission is disposed to inquire into. This letter of Mr. Wright's is just such evidence as a man could give if he went into the box and subjected himself to the oath, and to cross-examination, and put before the jury in the way, standing a thousand miles off. My objection is to its being printed in the proceedings.]

23132. *Mr. Stowe* [It appears at all, it will appear, certainly, directly connected with a note that the Commission does not treat it as evidence of the facts stated.]

23133. *Mr. Fiske* [Does your honor read Mr. Hubbard's letter in that way?]

23134. *Mr. Stowe* [Mr. Hubbard's letter was put in merely to induce a statement which had been got in some way, a statement is some proper. There is a statement that has been made, and a much more reliable statement was allowed to come in during the proceedings, positively to one who claims that statement which had come into that paper.]

23135. *Mr. Bruce Smith* [And Mr. Hubbard's statement was supported by the deposition.]

23136. *Mr. Stowe* [Yes, and the depositions are there, and they are evidence. They are rather vague on that point; but, so far as we can see, from the depositions, there was no suggestion of any hearing, and Mr. Hubbard admits that in his letter, which appears to be supported by the depositions. There is no analogy between the two cases.]

23137. *Mr. Bruce Smith* [I understand that Mr. Lyngdahl has three letters which he proposes to ask the Commission to accept.]

23138. *Mr. Lyngdahl* [Your Honor will permit me to say, with regard to those West Methodist witnesses, whom I do not consider I would not be justified in putting the Commission to the expense of bringing down, I have certain letters from them that I propose to put in.]

23139. *Mr. Fiske* [They can be put. They are not at all simple depositions.]

23140. *Mr. Lyngdahl* [No, but I wanted to state them.]

23141. *Mr. Stowe* [The remoteness of a witness should be considered. It might be different if the writer of the letter were dead. [The Commission conferred together.]

23142. *Mr. Stowe* [The Commission decides that, instead of rejecting the letter absolutely, they will let the writer of submitting it as part of the evidence stand over so that, if they choose, the cross-examination way, as they now propose produce the witness themselves before the Commission direct, and make this letter, which is now not evidence, absolutely admissible evidence.]

23143. *Mr. Bruce Smith* [May I see the letter, your Honor?]

23144. *Mr. Fiske* [No, I object, unless it goes to evidence.]

23145. *Mr. Stowe* [As evidence, then, it is not more than provisionally admitted. The Commission having seen it, they cannot say they do not see it, but, as I have said before, it will have as weight as all, and, therefore, they will direct that at present it do not appear in the proceedings.]

23146. *Mr. Fiske* [Very well, your Honor, I will withdraw the letter altogether. We certainly cannot go to the expense of calling a witness from New Zealand.]

23147. *Mr. Stowe* [As Mr. Bruce Smith puts it, from a quite independent point of view, it would be too dangerous to admit it, and it would make it look as if it were being tested—also though it is not being treated as evidence.]

23148. *Mr. Stowe* [Do I understand that the only condition upon which it will be admitted is that the Company, at their own expense, bring the witness from New Zealand.]

23149. *Mr. Stowe* [Then, of course, it will not be necessary to produce the letter. We know the Commission do not feel justified in taking him at the expense of the society, but we suggest that my personal interest may bring the witness over at his own expense.]



25750. Mr. Wade: I do not quite know where the list is to be drawn. I thought that a national witness would be called as the expense of the Commission.

25751. Mr. Wade: The proper way in which the letter is written, emphasizes the objection to its being submitted as evidence, being absolute bearing.

25752. Mr. Wade: Q. Have you had any experience yourself of explosions in coal mines? A. I have been at mines where explosions have taken place.

25753. Q. Would you name some of them? A. In this colony?

25754. Q. Yes. A. I have been in several since I came to this colony, and several in the old country—in Scotland, and in England. Immediately after the Oaks explosion I was there—it was a accident at the time—and at the first Blantyre explosion, and at several of the other explosions in the neighbourhood of our own colonies.

25755. Q. Where would that be, in Scotland? A. In Scotland, in Strathgalloway.

25756. Q. When you at the Bala Mine in this colony? A. Yes.

25757. Q. What were those explosions attributed to—what were those supposed to be? A. Well, Blantyre explosion and the Oaks were long before the theory of dust explosion became prominent. All explosions were attributed to gas at that time, but looking back, in the light of subsequent evidence and discoveries, in my mind there can be no doubt or question that the Oaks was a dust explosion. Of course, the Oaks gas office, and that was always present, and also at Blantyre, but in neither colliery in Strathgalloway it was a pure gas explosion; and there could be no question of that at all, because the results were very wet, and there were no dust.

25758. Mr. Robertson: Q. Where was that? A. In Strathgalloway.

25759. Mr. Wade: Q. You said that it was before the theory of gas became prominent? A. Yes, that.

25760. Q. Can you describe generally the results and indications after the explosion in the mine? A. Yes.

25761. Q. What were they? A. Charring, melting of dust in some cases; dust was present, and extensive damage to the mine, and the roads, props broken, slaps broken, and the outside charged, and the general evidence of the passage of flame at a very high temperature, and a very hot condition of the mine.

25762. Q. Have you seen any of the bodies in those explosions? A. Yes.

25763. Q. What conditions were they in? A. In Scotland, of course, partly owing to the climate conditions, nearly all miners wear very heavy clothing and clothing. In one case that I mention, that was quite cleared, and, in Blantyre, they (the bodies) were very badly burnt.

25764. Q. Have you had any experience of the effect of falls of roof in mines? A. Yes, I have known falls causing a good deal of damage, one especially in a narrow road in a colliery in Strathgalloway, where a fall took place in a narrow lower road, and killed the horse, and drove it over the slaps it was driving, and smashed up the slaps—and then, so on to another. I have known of falls blowing open doors and doing damage at considerable distances, where, in the interval, there would be no apparent indications of flame.

25765. Q. Let us come to Kenkil's now—when did you first go into the mine after the disaster? A. I was in bed when I heard of the trouble—I was very unwell at the time—and I got down by the first train, the 6 o'clock train, I think.

25766. Q. You got to the mine that night? A. I got to the mine, I think, about half past 9 or 10 o'clock—at all events, as late as I could get.

25767. Q. From time to time you have been all over the mine, have you not? A. Yes.

25768. Q. What are the first things that struck you as noticeable about the condition of affairs at Kenkil? A. The very great damage—I noticed that there was very great damage done. The other words were practically a wreck.

25769. Q. That is, at the instant moment? A. Yes. The timber was damaged, the steam-pipes all blown away, the engine wreck, and great big holes from the weight of the wind and from under the top and pushed between the engine. Even the workshops, a good many yards to one side, and behind the boiler—the compression of the air had broken all the uprights and deformed them to one side. The first night, of course, I only went down the tunnel for a working purpose, a specific purpose; but there was very great damage done to the roadway, as much as you could imagine possible, but it was perfectly cool, and there was no appearance of flame, no appearance of fire having passed over it, and I had my suspicions about them—indeed, I don't remember about my experience, but, in passing down the main tunnel, the floor rapidly diminished, until, before coming to the shaft, there was no damage done at all.

25770. Q. The main tunnel is the one going to the shaft,—was that the one you mean? A. Yes.

25771. Mr. James Smith: Q. Have you been describing the No. 1 or the main tunnel? A. The main tunnel, as far as the position of the No. 1, and from the position of the No. 1 to the shaft.

25772. Q. But when you spoke of the great damage? A. That was in at the position of the No. 1.

25773. Q. Mr. Wade: When did you first get through the No. 1 main road? A. I could not go into the mine except just now and again during the recovery operations. I was required to organize the parties outside. I was more than my work was out. I did not get in to make a thorough examination until after the Monday or the Tuesday. I have got the date.

25774. Q. It would be the 10th of August? A. Yes. Of course, I was in half-a-dozen times short distances to give orders to parties, and such like, but I made no thorough examination until the 10th of August.

25775. Q. Did you make a further examination subsequently, after this Monday? A. Yes, on many occasions, but specially on two occasions subsequent to that. I can give you the dates.

25776. Q. You might do so if you have got those dates? A. On the 10th of August was the first occasion; and the 15th of August, and on the 18th September.

25777. Q. You have seen three plans prepared by Mr. Wetherill? A. Yes, it was at my request that they were prepared. I did not know at that time that the Government were preparing one, or also I do not know that I would have caused it to be done.

25778. Q. You gave instructions for this to be done before you knew anything about the Government surveyors? A. Yes, and these afterwards I understood that the Government were preparing a similar one.

25779. Q. You say you have given through these three *Exhibits Nos. 17, 18, and 19*, these three different opinions made by Mr. Wetherill? A. The one is just in confirmation of the other.

25780. Q. That is what I mean? A. Yes.

25781. Q. Does your conclusion agree with these, so far as the signs of flame given are concerned? A. Yes.



Witness—Dr J. R. Robertson, 3 March, 1908

23182 Q Were there any other things that you yourself noticed at any time,—just take the No. 1 hose (Exhibit 15 was found to be untrue)? A No, I think that that pretty well embraced all the salient features.

23183 Q All the substances of force? A Yes.

23184 Q Did you see any paper any more? A Oh, yes, and here here—

23185 Q You see this is cut out of the place, only force are marked there? A Yes. At this point, where the lecture cloth was torn (board 57), near a fall, there was some lecture board; it felt like a board. I was on account of the lecture leaving at the time that I went out into the shaft window along with my book. It was on account of a report made to me, I think, by less, on my arrival, that he thought there was a serious fire on the face of the No. 1 working. It is Thomas and Joseph board, No. 57, on the face cut through down from the face.

23186 Q What did you see there? A I did not see that, of course, until after, on the 10th. My brother and myself and others on account of the sufficing evidence, and as it was most material that, before any extensive rescue operations should be undertaken, we should clearly ascertain the state of the workings in No. 1 went down to the shaft with a party for the purpose of ascertaining whether any of the smoke or products of combustion could be removed. We concluded that it was quite a partial fire, and that some evidence should be given in the collecting reports by some other subsequent employees who passed that place, and that the fire was out.

23187 Q When you were in evidence that hardly? A We found that in the dip side was a fall, a pretty small fall, and in the (23-6) rough side was a shock, a large square timber shaft; and that there were much paper, dust paper, scattered about everywhere to that shock. A suggestion was made on the Monday that the fire must have been from the fire from exploded gas. Of course no discussion ensued, save that I made a remark that I thought it would require a good deal of proof to convince me that that was so, inasmuch as the dry back on the shock was perfectly unaltered by fire, and that, if there was any fire, it must have come through that cut through and two dry bottom. But it had no traces of smoke or burning.

23188 Mr. Bruce Smith Q You see this? A Yes. A The clothes at the first cut through from the face. There were considerable embers of the fire, going through these cut-throughs, and that cut-through, and that it must have passed over dry lecture which was found about to catch, it must have passed over green paper, and it must have passed through the shock and back and left to cause whatever it is that the presumption was that the fire at that bottom must, in my mind, have been caused by something of force from the flame of an explosion, and I suggested at the time that it might be due to men smoking, or a match, or such like. Well, so largely discussion followed, but subsequently, under the action that resulted from the conclusion of the lecture, a pipe was found, as that I think there can be no doubt about it that the men had been sitting there at the time smoking, and had lit the lecture.

23189 Mr. Bruce Smith Q Does not your Honor think that that pipe might be produced here? We have heard a good deal about it.

23190 Witness Oh, certainly.

23191 Mr. Bruce Smith Q Have you got it? A I have not got it, but it is at the mine, I will telegraph for it.

23192 Mr. Bruce Smith Q There does not seem to be any doubt about the existence of it.

23193 Mr. Bruce Smith Q But one would like to know, because we now hear that it was in the fire.

23194 Witness No, it was down on the floor, covered by the debris from the fire.

23195 Mr. Smith Q Would you then estimate that the fire had actually been on top of the pipe? A No, it only indicated that the sides from the lecture had fallen over the pipe.

23196 Q The fire must have been actually at the pipe when it commenced at all events? A It does not follow, the lecture may not have been down to the floor.

23197 Q How would it light? A Very likely men were there smoking just at the time.

23198 Q Before they put the pipe there at all? A I think at the very moment of the accident.

23199 Mr. Robertson Q That is to say the lecture was lit by the men smoking just at the moment of the explosion? A Presumably, very likely. At all events, I could not see connection between the lighting of that lecture cloth and the fire from an explosion, inasmuch as, if it had been the result of the fire from an explosion, that fire left no visible trace on the lecture that it passed through, and swept away over the book papers and back.

23200 Mr. Fink Q That is, before it got to the lecture? A Yes. It had to pass over the book papers, that were in a large quantity on the spot, and it left no trace on them nor on the dry back of the shock that was within a few feet of the lecture.

23201 Q Now, moving to the line of cut through, near the face, did you see any signs of paper there?

A You are pointing to those to the left of the face?

23202 A Yes, between Farrell's and Aldrich's working places? A There were book papers all over. I did not pay particular attention to the exact position of the book papers, but they were all over the board. I felt rather surprised at it because I have given very distinct orders to all the colliery managers that I have anything to do with, and have allowed other colliery managers that I have nothing to do with, that they should be very particular in getting the men to take out all their book papers, and have told them that a fire had been caused in a gallery in the north, presumably from that cause, and I think, soon after that, Mr. Aldrich issued a similar letter.

23203 Q Did you notice the nature of the book on any of those props near those faces? A Except on one prop, doubtless on two within a space of, probably, 12 inches from the roof, we could get no evidence whatever of book, but on one prop, just near the corner of a pillar and a head, there was certainly a few pellets of what we took to be dried cloth, but the space could be covered by your own finger. On the other hand, there was not the slightest evidence of any book having passed through or touched the lecture that the fire displaced, in getting to that prop. The lecture is all these faces to the left of No. 1 Right was all displaced or blown outwards from No. 1.

23204 Q That would be in Farrell's head? A Yes and the adjoining ones to the left.

23205 Q And in Brown's head? A Yes.

23206 Q Supposing the force came from the No. 1 main road, going west, would the lecture in those books I have spoken of be right in the face of the blast? A Oh, yes; they would catch the blast. They were



them away off the boiler and displaced, and carried in to the back of my prop, to the front of the others on the bench, but the part of the boiler that was directly in front of the road was mainly carried on my prop to within a couple of inches, and twisted round prop, and moved out, so if you were looking it for marks The object of it is to view twisted round the different prop.

25807 Q On the other side? A Yes.

25808 Q Now, I want you to listen to this, and see if you agree with this. Page 5 of the report on the circumstances attending an explosion which occurred at the Unwashed Colliery, Rhinogparc, on 21st May, 1984,—and if this description of the explosion corresponds with your experience of explosions in collieries—

As it goes down by means of special culvert, the air goes directly into the explosion chamber. To a careful person examination I ascertain that the flame is in panels through all the windows and working places situated past; and that it had not extinguished the light of the candles. The panel that the explosion had passed through my panel of the mine was affected by the pressure of stroke of culvert and had suffered to a certain extent, but it did not burst. In a window, timbers remained and timbered severely by heat. (Said to be not a small) globular particles of unburned, when they passed round with the dust, much smoke of various thickness in the form of transverse ribs of red smoke of great magnitude. (Said to be) flames out and out of some distance from the ground at which they were originally set off; some smoke, both hot and empty, towards the end of the culvert, or a greater or less angle to the side of the culvert they had been coming, and in one case, in which smoke (said) completely up to the culvert and out from there from the culvert the back walls to the side they had been it heated, and the dust (said to be) (Said to be) back, with a certain, and the back of the culvert along the floor, and so on. The panel that the explosion had got passed through, or penetrated into, any particular roadway or working place, on the other hand, was affected by the complete absence of every one of these phenomena.

Does that description agree with your experience? A That is a general description of what you might expect to find after an explosion of gas, or of dust and gas. I think, in a neighbouring colliery to that, a little prior to that explosion, do not know that I can give you the Welsh pronunciation, but I think the English would be Rhyddol—(I think that the description of that explosion is much more graphically told.

25809 Q Yes in the same way? A I understand that in one part there it said—I read it at the time—that the very gas or smoke in the sprays prop was disturbed and was found in globules.

25810 A Yes, Welsh? Q Is that it? On page 7 of the report, at the bottom—

Examination of very great heat was, however, visible at many points in every direction, and at several points in the open roadway, consisting of scalded walls, charred timber and parts of iron work, had been done in the surface of the heated timber by the heat, and hastened by the expansion of steam while it continued.

A Yes, the room.

25811 Q That is what you are referring to? A Yes.

25812 Q Do you know of your own knowledge when the percentage of volatile matter was at 24? A I have seen several samples of 24. We have got several southern coals analysed on various occasions. It varied from 22 to 23, or 24, and probably 25. I think South Wales 24.

25813 Q What is the percentage of volatile matter in the North Wales coals? A About the half of that, about 12 to 15 in some cases, I think, a little less. I think in the North Wales it is a little less than that.

25814 Q Where did you find that force originated from in the case of Mount Kemble? A The 4th Right.

25815 Q And what was its direction in leaving the 4th Right? A It is quite clear. The mine was perfectly clear to me, that it came out of the 4th Right, with very great force, impinging against the solid barrier of coal on the sky side of No. 1 Right, and divided, one portion going straight to the face, and the other portion going to the side wall.

25816 Mr. Street (said) Q That is one side and the other side? A One to the face and the other out.

25817 Mr. Wade Q Look at this [dividing 20], Mr. Cawthorne, the Mining barrow, beard, some were that was marked a skip between the 4th Left and the 4th Right to that point marked 200 yards, between the 4th Right and the 4th Left. The wire was broken, and the skip was found (said) of the 4th Right? A That is right.

25818 Q You say that a great force came out of the 4th Right? A Yes.

25819 Q You say it split into two and out to the main road? A Yes.

25820 Q Do you think that force would be sufficient to drive that skip, if it was standing between the 4th Right and the 4th Left to the point marked 200 yards? A It was sufficient.

25821 Q Do you think that skip would move at the time? A Certainly. From the 4th Right towards the waste end and the face point to a certain extent going in towards the face.

25822 Q It has been suggested that the explosive matter came out of the 4th Right, and ignited at Morrison's light somewhere about the 4th Left? A Yes.

25823 Q I want to know whether, from what you saw, you think that would be practicable? A No, I do not think so. I do not think it is correct.

25824 Q Supposing a blast of air rushed out from the 4th Right and went out to the face, what do you think would be the condition of Morrison's light? A I do not think it would be slight unless it that force came out of the 4th Right. I do not think it would be possible for a light to exist on the waste road.

25825 Q If a blast of air came out of the 4th Right and went into the 4th Left, say my Morrison's light would be put out? A Yes.

25826 Q What would get it out? A Either the blast pushing the light or before it, the air that was coming in No. 1, or the transference by penetration of the vibration of the air. It travels with great rapidity, as strong as 1,000 feet per second. No. 1 Right was an intake, a face came out and divided the intake current, and pushed it both ways. Therefore, the first force that would pass over the 4th Left would be fresh air.

25827 Q You mean fresh air, quite apart from what came from the 4th Right? A I could hardly say that, what would come from the 4th Right was severely fresh air, because it was not being mixed with much impurity that you could say it was fresh air, but No. 1 Right was an intake. The body here is to the intake (Morrison's body). The face coming out (from the 4th Right), and impinging against the solid barrier to the top of that intake, would simply divide the intake current, and push it both ways (sings) and out to the 4th Right)—push what was in the road both ways.

25828 Q Do you think, from what you saw, that there could have been an explosion at Morrison's light; and that the explosion then travelled out to the 4th Right right out to the tunnel? A That, to my mind, is entirely impossible.

25829 Mr. Robinson Q Would you repeat the question, please?



Reverend J. E. M. Stevenson, 5 North, 1922.

18920. Mr. Wade | Q Could there have been an explosion in the neighbourhood of the 4th Left, or 3rd or 2nd light, and then that explosion travel and from that point right out to the tunnel mouth? A Yes it is utterly impossible for this.

18921. Mr. Wade | Nobody suggested this.

18922. Mr. Wade | That is what Mr. Atkinson said.

18923. Mr. Atkinson | I don't mean to say that, if an explosion started at the 4th light, it would not go out to the tunnel mouth.

18924. Mr. Wade | No. It was talking of the 4th Left. I will put it in another way.

18925. Q Did you see any signs between the 4th Left and the 4th Right of an explosion having come out from the 4th Left to the 4th Right? A No.

18926. Mr. Wade | Mr. Atkinson suggested that it was possible for a light at the 4th Left to travel an explosion over the 4th Right, the light remaining back, or flaming back to the main body of gas coming out of the 4th Right. The theory was worked out in this way, that Mammock's light, sending the inflammable and the 4th Right. The theory was worked out in this way, that Mammock's light, sending the inflammable and the 4th Right. The theory was worked out in this way, that Mammock's light, sending the inflammable and the 4th Right. There was a question put by Mr. Bruce Smith at one stage of the proceedings which, perhaps, most clearly described the theory.

18927. Mr. Bruce Smith | Q Did you say it was utterly impossible for the explosion to extend to the tunnel mouth? A No.

18928. Mr. Bruce Smith | I thought you did. Now, however, Mr. Gaskell might read that portion of the evidence.

18929. Mr. Gaskell then read the following question and answer:—Q Do you think, from what you saw, that there could have been an explosion at Mammock's light, and that the explosion then travelled outwards from the 4th Left right out to the tunnel? A That, so my mind, is utterly impossible.

18930. Witness | I did not hear that word "tunnel".

18931. Mr. Bruce Smith | Q Do you want that corrected? You do not say that is impossible. A I see no evidence of the force having travelled from Mammock's light to the 4th Left towards the 4th Right.

18932. Q It is not your view, that it was utterly impossible for an explosion from Mammock's light to extend to the tunnel? A I did not hear the word "tunnel".

18933. Q Where did you think it extended to? A I thought it went to the 4th Right, Mr. Wade was speaking about the 4th Right in the previous sentence.

18934. Mr. Wade | This is the passage I had in my mind's eye, para. 11825. Mr. Bruce Smith asked a question in the cross-examination about Mr. Atkinson, talking about the contradictory force towards the face of the No. 1 Right.

Q How do you account for that apparent contradiction, how do you reconcile that apparent contradiction? A Well, meaning that question took place near the 4th Left road end, or junction the explosion would radiate from that point in all directions. Going away from the 4th Left, the two stoppages referred to are respectively about 100 and 200 yards.

18935. Q Did you see any signs of the force radiating from the 4th Left and going towards the 4th Right?

18936. Mr. Wade | There is no necessity to ask that, because nobody does anything, nobody sees any force outwards from the 4th Left, all the evidence agrees to that.

18937. Mr. Wade | Q Supposing the force had radiated from the 4th Left, going outwards, would you expect to see some signs of it? A Yes, certainly—from an explosion of gas—yes.

18938. Q Now, look at the plan again (Exhibit 38), you see there is something like a wall or side of dirt on the 4th Right portion of the No. 1 road? A Yes.

18939. Q When do you think that wall would be raised? A It would be swept out with the force from the 4th Right.

18940. Q That is a force coming out from the 4th Right? A Yes.

18941. Mr. Atkinson | Q It was the same appearance consistent with a force going in?

18942. Mr. Wade | I was just going to ask that.

18943. Q Supposing that had been raised by a force coming from the 4th Left and going into the 4th Right—except it looks like that? A But all the facts are against that supposition between the 4th Left and the 4th Right. The whole of the evidence is that the force descended from the mouth of the 4th Right towards and beyond the 4th Left.

18944. Q If there had been dust blown out from the direction of the 4th Left towards the 4th Right, and if that dust had been sufficient to cause the deposit of dust made the 4th Right, would you expect to have found indications of dust going against the obstacle in the road between the 4th Left and the 4th Right? A It would have expected to find at three indications of force travelling from the 4th Right towards the 4th Left reversed.

18945. Q Well, there were indications of dust heaped up against the outside side of its roller workings, were there not? A Showing that the force came from the 4th Right and went onwards.

18946. Q Would you expect to find any signs against those rollers if that dust had been blown from the 4th Left outwards? A I would have expected all the indications in the road reversed.

18947. Mr. Atkinson | That is not an answer to your question, Mr. Wade, as to whether, or I suggested, the appearance of the small end at the entrance to the 4th Right might be consistent with a force going in. 18948. Mr. Wade | Q Supposing you think your mind up to everything else, and you see this sort of dust there would that be consistent with a force going to the 4th Right? A I would have to shut my mind to all the other evidence.

18949. Mr. Atkinson | That is not an answer.

18950. Witness | There are a lot of these things that you never can properly explain. It is impossible to ascertain all the facts of the case at the moment of an accident.

18951. Mr. Atkinson | Q Look at that little heap of mud and at the entrance to the 4th Right, is not the appearance of that on the plan just as consistent with a force going away as with a force going outwards? A Well of course, I go over upon the other faces, I have to take all the forces in the 4th Right. Then did you strike me—I saw that—but it did not suit me, an appearing inconsistent with a force coming in. I took it as coming out of the 4th Right. It seems to me that it has just been swept out of the 4th Right, and swept round here at the corner across the gateway between the main No. 1 and the travelling road.



road. Everything in the 4th Right shows an outward force, and everything from the 1th Right towards the three shows a uniform outward force. I saw this, and it did not strike me as inconsistent with an outward force. It appeared to me as if it had been swept out of the 1th Right. If I crossed, in all these points there are large quantities of dust and debris and small rock. I saw it, but it did not appear to me to be at all remarkable or strange.

19851. Q The point I want to get at is this: whether that lump there, as it appears on the plan, or on the ground in the mine, is not perfectly consistent with a force going (up) as well as outward? A I cannot say it, for the reason that all the other witnesses' facts—*(interrupted)*

19852. Q But I want you to state whether your mind everything else? A I cannot do it. You ask me to do an impossible thing.

19853. Q Well, of course, if you will not.

19854. Witness: I object to that; there is no "will not" about it. I am not here to believe anything. I am here to give a plain exposure of the facts as they appear to me. I advocate no theory. I am not here to advance any theory. I object to anybody saying I will not, it is not right.

19855. Mr. Wolfe: Q Do you remember the 1th Right road very near the coal edge—did you notice any props there? A Yes. I travelled over props, but it was very difficult to distinguish anything until we had got a better put up, until about a month or so we were afterwards, because in the 1th Right road was so strong that we could not remove it again. There was great difficulty in getting into the edge at all, but when we did get a better put up, we got to the edge of the fall, we saw there evidently had been a couple of shocks, one on each side of the road, and they were tumbled down and swept from their position partially into the crack of the road and outward.

19856. Q You mean that the direction of the force was outward? A Yes from both sides. There were evidently one on the right-hand side and one on the left-hand side, and evidently the force of the fall had forced these out, the one from the right-hand side in towards the road, all pointing to a force coming down the 4th Right road.

19857. Q Did you see any of the props which were pointing in as to indicate that the force drove them inwards? A No, I saw no evidence of forces going inwards. I do not see how it is possible that any force could go inwards, for the reason that the fall was not quite clear up against the rib of coal. It was practically full of debris. I quite agree that, in all these cases, there are a number of facts incident to this appearance, that seem to be confusing, but it is impossible, without having the correct data, to satisfactorily account for everything. The particular coal of dust, I saw it—it did not strike me that there was anything about it inconsistent with a force coming over from the 1th Right, because of the surroundings pointing towards the force coming from the 1th Right, and down the 4th Right.

19858. Q Can you form any conclusion as to the cause and the direction of an explosion in a mine by taking otherwise than a general view of the whole thing? A You must take the general facts of the case. You must take these all, and examine them with as open a mind and as large a view as possible. We do not know all the facts. It is impossible for anybody to get it in the facts. We are working in almost every case, without sufficient data. We are only left in given together the appearances as they present themselves, and leave it to our common sense to account the cause.

19859. Mr. Wolfe: Q Now, take this case: if there had been an ignition of gas about the 1th Left, and the flame had run back to the 1th Right, and the first explosion took place there—if there were the actual facts, are the signs which you saw in the neighbourhood of the 1th Right in the No. 1 road consistent with them?

19860. Q Were you able to account for this disaster on the theory of a gas explosion at all? A No, I could see no evidence of it.

19861. Q Then, what other possibilities occur to your mind? A Apparently a great wind blast. It appears to me that all the appearances can be accounted by that.

19862. Q Would there be transmitted to distant parts?

19863. Q In what way? A In the case of a sudden development of energy, of course it would be transmitted by pressure by waves to a distant part, in the same way that a blow on that often opens doors, and causes a good deal of destruction at distant parts without apparently any transmission of force. In the same way the disturbance from a motion often causes a good deal of damage to a window at a distant part, and get a person standing between the window and the motion, can prevent the passing of the force.

It is simply the pressure of the air by rapid vibrations—the transmission of the waves of sound. Almost every day in this world I get my picture in my room displaced by the 1 shock gas, but if gas are travelling out on the wave, you get positive no transmission of force—on waves travel in place, and it is waves—but still the windows have to be left loose, or else they would be broken. I suppose, and I have to adjust the picture almost every day. The gas points straight (one way) and it is at a distance, I suppose, of three quarters of a mile.

19864. Q Do you know whether that pressure theory has been laid down by any of the inspectors? A Yes, subsequently to this (meaning the Kieldash disaster) we saw very much disturbed in our minds to account for the phenomena of this disaster, and were naturally looking about in every possible way to account for it, and I received a hint from a very recent mining engineer in the North of England, that the late Chief Inspector for Mines, Mr. Dickinson, was rather taken with the notion that some rather strange outburst explosion could be attributed to the pressure force of the air displaced by a large fall, and about the same period that I received that information, I read in some of the mining journals about some remarks a site in connection with the Ulfeston explosion.

Ulfeston was a large colliery in the Llanberis and Salford, on the margin of the Hamilton coal field, adjoining Blaenau. It seemed to me that, in that colliery, the margin of the coal was found to be in one working, where there had commenced piling, and, in that coal field, the roof was a very tender and indeed, a very large fall had taken place, and in the absence of any other suggest remark, Mr. Dickinson, and I think, Mr. Ashworth, the Inspector, and, possibly, other inspectors—possibly Mr. Dickinson, the Inspector. I think he was there—Mr. Dickinson, at all events, in his report, attributed the probable cause of the disaster to the effect of that large fall, inasmuch as, immediately after the last explosion took place—that was in the two—simultaneously, and in different parts of the mine to the dip sides explosion took place, which he could only account for by the pressure force of the air. And a curious thing in that explosion was this, that the only two men of whom I speak under caution, because it was an explosion that took place since I came here, in fact only about







18890 Mr. Fink: I tender the report of Mr. Dickinson on the Union explosion in June 1887.

18891 The Report was put in and marked Exhibit No. 37.

18892 Mr. Fink: I tender to the

In regard to the being equipped with dynamite and an explosive being spread, some words are by persons who were near to a paper mill before the Mountain Railroad Company by the Angus Smith (late Chief Inspector of Mines) who, as well as described an apparatus which he also exhibited to the Society by which he had thought that the means of most operating of dynamite as a compound one might be detected by persons. From other tests, however, an improved apparatus of the same nature made by the Bureau, upon no ground that the tests could be used at all by the presence of ordinary workers in the case of the presence of lighting lanterns by persons. This would afford a more fully suitable and a more complete system of the present explosion, with the force coming towards the shaft from different directions, than that afforded by the apparatus that it was the first time that, around the base of the shaft, the workers, especially into the shaft, which it would have to enter quite low, and then, from the top, the indications of lines outside. The presence of an, built in the shaft and all other conditions, had been so strong, to show they should of thinking of some of the bodies, and to fear up from inside they call elsewhere.

Well, so there were you have spoken of, there was the evidence of small quantities of the dynamite in the mine?

A. Yes.

18893 Q. But what I want to ask is this: do you think the principle applies the same in the conditions at Mount Kenilworth? A. I think so.

18894 Q. Would you get the perspective here? A. I think so. I do not see anything hazardous. The subject is so obvious proper factors and data, and those are the things we cannot change, so far as I am concerned.

But the outstanding features of Mount Kenilworth are these: that, with a large amount of damage was done to three protective roads in the mine, there was practically no evidence of them at all. Previously the only evidence of them are confined to about two or three props; and you could almost cover those evidences with two or three fingers of your hand. Practically you have to examine each minutely to discover any evidence of them at all, but, in an ordinary gas explosion, the evidences are all around you, everywhere; or in a gas and coal-dust explosion. In both they were all around you everywhere; you could not go wrong; you could almost follow it like a hare.

18895 Q. Now, I want to ask you about some of these recommendations that have been put forward. Recommendation No. 1.—Managers, under-managers, deputies, and shot-fires, to hold certificates of competency by examination, and to have had five years' practical mining experience, before being eligible for appointing positions? I only want to ask you about the deputies and shot-fires at present? Do you think that it would make the mine any more safe than it is now if the deputy had to pass a written examination?

A. No, I do not think so. We do not see deputies now here, the same claim that we would draw them from in the case of examinations. They (the Managers) take the men who have had the most experience, the most cautious, and other needed men at present. They look for men of experience. As a matter of fact, I do not know how any one would be brought up here and get experience in shuffling and testing with safety-lamps, except in those one or two cases they take and safety-lamps, such as the Minneapolis. I do not see the possibility of getting men to pass an examination in shuffling and testing with safety-lamps. They have had no experience here. You would draw the deputies from the class who have come from the mines in Great Britain, where safety-lamps have been in use practically for all time since the introduction of safety-lamps. I think you would surely fail to get the men.

18896 Q. Well, you say whether in some cases, as when the deputies are middle-aged or elderly men? I do almost all over I should think so, but in the case of Mount Kenilworth the deputy had a first-class certificate. I do not wish to make an exception remark or to best anybody's feelings. But I remember that William McMorrey was one of the best men that I ever knew. He was unorthodox himself—he was history possessed in a sense; and he had had large experience—he was brought up with myself, so boys we were brought up together. I do not think that the men exist in New South Wales, or much of the East, that could have made that man over from the right path.

18897 Q. And would you think it would be necessary for the Manager, in spite of any certificate that the applicant for a deputy's position might hold, to examine the man himself? A. I think the Manager always, practically, puts them through an examination: that is to say, he never would propose, I should think—at all events I will state my own feelings, in the matter—I never would propose for a man to be appointed a foreman whom I had not personal experience of, or in whom I had not confidence that he would do everything that was required of him, and would do things in a proper way.

18898 Q. And does the design of managing for better brains come in? A. Of course. You can get people to pass an examination, there is no doubt; and it is a very good way, but it does not follow that the man who passes would ever be a manager. A manager is born. The administrative functions are born in a man. They are not consciously brought out by any examination. As a matter of fact the most successful managers, not only of coal-mines, but of all other mines, throughout the world, have been chosen from a class whose education has not been of a very serious description. I say nothing against education, not a word; but I simply say that the most successful men, both now and in the past age, have been chosen from people who have had practically no primary education.

18899 Q. Do you know if there are many men, say, in New South Wales, holding Service Certificates gained in England, Scotland, or Wales? A. Oh, I think the majority of the Managers in New South Wales hold Service Certificates. There are a few I know that got them in the old country, and there are one or two who have got them since examinations were introduced here, too. But I know of

18900 Q. Would you say that the experience which they gained makes such conditions in the old country would be of great value to them? A. Certainly. The conditions of mining in the old country are, in a general way, totally different from the conditions ruling here. It has been practically no difference at all. In the old country, where we would all experienced men would be anxious that you could put to any sort of work wherever everything would come handy to them; but the men that we have here are simply recent trained to them and the coal. They really do not know mining or people observed in the old country do. In a manner, it must their fault at all the difficulties that arise in the old country do not exist here, and, if they did exist, we would not work our mines.

18901 Q. Another suggestion is [Recommendation No. 6].—"Where workings be absolutely needed and" Do you agree with that? do you think that would be safe? A. I think waste workings generally are pretty safe of

18902 Q. In what sense would you say that? A. Well, it is almost no general question for anyone to answer in so intelligible way. I should like to have the proposition of that put that question in a particular



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particularly way. It is almost impossible, to answer it in a general way. I think waste workings, that is, good workings, should also be closed workings, are generally worked off. They run themselves off the roof of the mine and under them off.

23013. Q. Yet, but exposing these has got being glass off to abandoned workings, do you think it would be wise to seal them up so as to make it a kind of gasometer? A. It might in some cases, but here again we are going into the probability. You have to deal with the probability case as we meet on it here, but, that being so, I should say that the connecting roads should be filled up so as to avoid gas helping as in a gasometer, as it were, or reservoir. In the waste itself, that is in the good, I take it that, the rock having fallen, you can do no more. In that, if the probability case is the worst, as it generally does, I take it, that it is better a mine so built as the coal itself. In longwall workings, for instance, the road that falls, and the pillars and debris that you put in to fill up as you take out the coal, when the pressure comes on it in a year or two, it is just allowed to be the end itself.

23014. Q. The real suggestion. In that all places, except longwalling, should have out throughs to not more than 30 yards apart [Recommendation No. 5]. Do you think that would work? A. It is a suggestion, I should say, of men that are totally ignorant as the physical forces would be totally inadequate. No man would make a recommendation like that who knew his business. Of course, it is not difficult to reach a depth, or take a very moderate depth, at which 30 yard pillars would be totally inadequate: in fact at comparatively moderate depths it would be inadequate, simply because the natural pressure to come in is across the entire strength of the roof. There are no such limitations in Great Britain, where there is such a vast quantity of coal mined every day, and where the least taking of the day counts. It is only in this insignificant Colony where you find, that sometimes, they are bound to be kept away in time, and that have in fact to be done.

23015. Q. How do the depths in England compare with the depths here?—I mean in the old country generally? A. I do not say. The upper one instance of just an deep a mine here as in the old country, put in a rule, the depths there are greater than here are here at present, but we have very much more limited fields; and I question whether we shall go with great depths. The present rule that gives the mines and mining here have originated at a time when all the collieries were working a crop mine, that is, a shallow mine, with a very exceptionally low roof. It has been the question of coal mining in New South Wales, because it has introduced a species of wide beds and small pillars and high girders that will be most detrimental to the expansion of the industry.

23016. A. [Edwards.] Q. You appear to be under the impression that there are such restrictions in existence at present? A. Where?

23017. Q. Here. There are no restrictions as to delivery of coal through at present? A. No, not in present. I think it was in the last Act. In the present Act there are no restrictions, if you put in limitation. I am glad you corrected me. I was thinking of the last Act.

23018. A. [Ward.] Q. There is the alternative, that you must use brattice? A. But it is carried out at the present time.

23019. Q. Do you think the practical purposes are met, if with out ventilation is carried up in all cases, no matter how you get it? A. I think it is a mistake to look and restrict the management of mines. I think it would be very much better if you would take a cue from the old country, and simply be content with "an adequate amount of ventilation."

23020. Q. The next recommendation is No. 6, that the inspection by the miners shall be made in all cases with a locked safety lamp? A. I do not think that anybody would object to that; at all events I would not object to that.

23021. Q. The next suggestion [Recommendation No. 7] is that, all through the mine, one footlight should be an extension of the mine with the hydrogen lamp by the deposit of the mine, and the next footlight there should be an extension by a Gasometer, brought under the same conditions? A. I think it is quite necessary. I do not think that any Manager will speak under correction—would be content to put a hydrogen lamp into the hands of every deputy. It is a very difficult and a very costly instrument, and the hydrogen flame goes to a very high temperature, and I think that it might be productive of very grave results. At all events, I should not like to put a definite statement like a hydrogen lamp in the hands of anybody I was not sure about. I think it would be very dangerous. Besides that, at the present moment it is a very difficult matter to keep hydrogen lamps in order. At all events that is not the experience. I have got out a considerable number with two cylinders in each lamp, so that one cylinder could be put out when the other was in use. But I said that the makers of hydrogen lamps, like the makers of safety lamps, do not work to a standard rule, and the cylinders do not fit any lamp. They do not make standard parts, and it is with very great difficulty that we can get hydrogen lamps that will be of any service. The hydrogen is under very high pressure, and the little screw that regulates it cannot be repaired here. We have tried several instrument makers, but they cannot repair it. It leaks. I do not know very well what to do, because if you could it, here, you have to send from the lamp with it, because they are clearly do not standardize the valves. The same way with safety lamps. You get out a emergency, and you want some of the parts that have been broken, or have got out of repair, and you send home for a repetition of certain parts, and you find, when they come back, that they will not fit either. And the reason, if the makers give it, "Well, we have altered the design of the lamp." We are under very great difficulties here.

23022. Q. But what would be the difference in the case of a mine had to examine the whole of the mine with a hydrogen flame? A. A man never could do it. It would require several men constantly doing so. It would be very much better in the hands of the Manager to go occasionally into the mine, to ascertain the nature of the returns, or in an exceptional case where he had reason to suspect anything. It would be very much better that way. I should think it should be confined to that. I do not see why we should be so much as allowed to fly into everything that is new. Because things are new, it does not follow that they are to be used. I do not see why we should get stuck of great many contrivances such as England. I think we should follow them. They have hydrogen lamps, and they know the way to make them. They have people who understand these things who are quite respectable as any we have here. I think we should be quite content to follow a country that produces about 1,000,000 tons of coal a year should be quite content to follow a country that produces about 200,000,000 tons.

23023.



21891. Q. Supposing the deputies carry out their suggestions with the safety lamp, and the Government Inspector makes his recommendation, and the district inspectors make their suggestions, and the Manager, at his direction, concurs with the Hydrogen flame, do you think that is sufficient to secure the safety of the mine? A. I think it is quite sufficient.
21892. Q. When the eighth suggestion is made? Measurement of 100 cubic feet of air per minute to be provided for every horse instead of 100 ft. at present? A. Yes. It is a large order.
21893. Q. Do you see any need for it? A. I do not see any need at all. I do not know how many to carry on mining if such requirements are that we consider. I think the word "adequate" means every thing. If, on the opening of the Government Inspectors, there is any suggestion any person may carry home, or every man and boy, in a district, he will give his reasons why he thinks so. If the Manager disagrees with him, they can meet and discuss it. I take it that the Manager and the Government Inspectors vary reasonably, sensible men. I take it that the Government Inspectors is a rule that the Manager the same. If there were any special requirements, special efforts would be made to give what was necessary, but the word "adequate" covers everything.
21894. Q. Then, if the Inspector asked for more ventilation, and the Manager did not agree with him, what course would you suggest for settling the question? A. Simple arbitration, I suppose, would be the rank order. I can hardly think that any Manager could be forced who, if he were convinced that the reasons advanced by the Government Inspectors were right, would refuse to give the necessary ventilation. It is the least of every Manager how much ventilation he can give. Of course it depends, all sorts of things may be easy to complete 100 feet in one mine, producing a given output, but it may be next to impossible to complete 500 feet in another mine producing the same output.
21895. Q. Without further expense? A. Yes, and the difference in the heat of the coal and the kind of the mine varies so much.
21896. Q. The eleventh suggestion is that a weekly measurement be taken of the air in each section? A. I do not object to frequent measurements of the air. I do not consider it is worth arguing so. As the mine runs, it is very much in the presence of the thermometer and the barometer at the mouth of a mine. If they are not there the Manager is punished; if they are there, the men do not look at them. It is the same with the speed rule. If there are no special rules, the Manager will be punished, if you give them orders to the men, they never read them.
21897. Q. The next recommendation is No. 12—"Every supply of safety lamps, equal to not third of number of persons employed below ground, to be kept constantly in good order and ready for use." Mr. Atkinson suggested that, in a mine working with naked lights, a number of safety lamps equal to one-third of the workmen employed would be sufficient, and in a mine working with safety lamps, an extra number equal to one-third of those working would be sufficient? A. Yes, I am quite sure that Mr. Atkinson has given that a good deal of thought. I know of no Manager in the country who, if Mr. Atkinson asked that provision, would not comply, without any enactment. It stands to reason. The difficulty, of course, up to the present, is in getting safety lamps. We cannot get them. I have had 1,200 safety lamps ordered since the early part of September, and they are not yet to hand.
21898. Q. The next suggestion (No. 13) is that the travelling and look-up roads, and other places necessary, should be properly watered? A. If there is dry soil under, certainly, if you can get water. But there are some mines in the country where there is no water, and it cannot be got. There are some mines in the south, where, last year, if you had asked them to water the roads, they would have been glad to do it, but they had no water, and there are some mines in the north where they had to raise water with water purchased from the Government, and taken there in the train.
21899. Mr. Bruce Smith. Q. Which mine? A. Shabua and Wailend, and the Matapoulika, in the south; and Mount Kewika had no water to spare. Mount Kewika had no surface water, and all the water used for the purpose of raising steam in the boilers had to be pumped from a small reservoir inside. Of course, in ordinary seasons that would not be so.
21900. Q. That water came from the mine? A. We wanted our last extremely when a little rain came. Smith said we in the same position they had to bring down water in the firemen's buckets, and pump it on to the pump, and run it to their reservoirs. We were reduced in the very last extremity.
21901. Mr. Wade. Q. Where was this? A. Last year. A few months ago. That day that rain came, we were just reduced to that extremity in the north. We were just about to order from the Government again, when we got an intimation that they did not know whether they could supply us, because the Hawke river was so very low. However, rain came and replenished their dam. Of course we have been finding that a great deal of the dirt, especially in the northern mines, that is on the roads, has been coming from the sliding masses on the surface, and we have adopted a plan of sending fire sprays of water through the seams, below the seams, and it has perfectly elevated the dirt surface—there is no more dirt.
21902. Q. If you are wrong a day, and you waste the neighborhood of that shot, say, for 30 or 35 yards beyond the possible reach of the flame, and you see that there is no gas present, do you think that meets the ordinary requirements? A. I think it would require to meet the ordinary requirements, because in exceptional seasons you can do no more, even if you could do that. Of course, it might be that you might order the use of all the high explosives, but even some of the high explosives are not devoid of flame or danger. But of that, I am, have been removed from the permitted category. Some of those that were included in use in the colony have been removed entirely, as having caused explosions.
21903. Mr. Roberts. Q. Still I presume the sort of the high explosives offer a greater degree of safety than gunpowder? A. Undoubtedly, I am sure.
21904. Mr. Wade. Q. Supposing an explosion takes place, and you have not only patterned and watered—do you know whether explosions have been known to pass over those who produced? A. Well, that depends. Certainly in some recent explosions the explosions have passed over some very wet lengths of road, and long lengths. That depends. It is not to be feared to the permanent effect of compression of air, that of course I do not see that wet roads would offer any protection, but undoubtedly the wetting of roads, where they are very dry and dusty, is a very appreciable thing to be done, possibly you can estimate them, because a moderate wetting is not enough. Of course another thing is the danger of watering roads where the dust is on the roof, because it is not a very good thing that will stand watering; and it may be that the more may be very much more than the dust, in fact, in one colliery that I know of in New Zealand, we had to stop watering the roof, it was bringing it down, and we had to consider our attention to thoroughly watering the sides and the floor.







23031. *Mr. Webb* : Q Then you have no personal objection to it, but you do not believe it would be effective? A I have no personal objection to it.

23032. Q But you doubt the efficacy of it? A Yes.

23033. Q And do you pick up that map from these notes, even if they are stronger? A Oh, yes, there is no difficulty about it. As a rule, men accustomed to carrying have a pretty well developed organ of knowledge, something like business. You would be lost in the bush where a business would think it as plain as the streets of Sydney.

23034. Q Would there be any advantages, do you think, in putting up something to exclude the forerunners? A None. There is no such distinction down below—logs tearing them down. I know I have given instructions several times to put a finger board up, but in a very short time it is all balanced to pieces. There is no something for the cautious character of some of the logs. They are not of all kinds. I have no objection to that at any rate.

23035. Q Reconsideration. No. 15. Did you ever know of a black hat of employees being kept in this country? A No. I have never heard of it.

23036. Q Can you say whether or not the men get their pay from the Manager when they apply for employment—from your experience? A I am quite sure they do.

23037. Q With regard to that, previous systems of insulating men to find their way out, do you think that whitewashing the owners, or making the road, would be any help? A No, it would not, and it would involve an enormous amount of labour, and there is no need for it, because it is simply like a road through the bush—you can follow the track. When a number of people go, they leave their impression on the floor of the road, and you can follow that; and, in the case of the bushy track, where there are a number of openings, and they are all round, you can go against the wind. There is no possibility of a man losing the road if he has his way about him.

23038. Q Now, with regard to this suggestion from Newcastle, that all the roads on which the men travel at all, wherever the road is, should be levelled 6 feet high, do you see any necessity for that? A None whatever.

23039. Q Would it be a question of expense, do you think, where the work is less than 6 feet? A It is a question of so much expense that a good many of the owners would never think of doing it. As a rule, the cost of the New South Wales is not under the same conditions as the rest of the world, when such a premium would simply be added, it never will be proposed by a man. We have work for practically no profit, there are coal mines here employing large numbers of men, employing no coal of money or wages—and great wages, phenomenal wages too—that have never paid a dividend. We have no adequate profit here, such as they have at home. Notwithstanding the premises, almost insuperable, capital—\$25,000,000 of ton of coal, is almost impossible to produce—notwithstanding all that, they have an abundant sale, and they get much higher prices, with much less cost of production, than we have here. We have the highest wages in the known world for production, and we get the lowest price in the known world for our coal.

23040. Q Now, another suggestion from Newcastle is that there should be appliances in the spout shaft sufficiently strong to hold up all the men within as here? A Well, that is pretty sweeping. There are, at present, appliances for drawing up men, but the appliances at the collieries of New South Wales cannot be studied by any modern railway in any part of the world. The character of an accident is practically reduced to nil, but, notwithstanding, and very properly, all the collieries have appliances for raising the men; but, probably, not in as large a number. I suppose it would take half an hour, or three-quarters, to lower the men, with the large appliances of the descent shaft. Men are dependent on being ready, and they have to be kept in hand with a very strong hand at the bottom of the pit, and, of course, when the men are ready to draw them up by an agent pit, they are generally in an agitated state, the men pushing or before the other, and it is a work attended with a good deal more difficulty. I think that would be quite an unnecessary precaution.

23041. Q Do you know if there are small cages attached to the spout shaft? A I think so, small cages suited for the lighter engines that are provided.

23042. Q You would want a stronger engine and a bigger cage to meet these requirements? A Oh, of course, in the last of cases, in the spout shaft they have only one cage, whereas in the descent shaft they have the men with their engines. The one batch of men are going down, and one cage when the other one is coming up, but in the case of the agent shaft the haulage of the men would only be done with one cage and one cage. Some of the spout shafts are rather small for one cage.

[At 12.45 p.m. the Commission adjourned until 1.45.]

#### ATTENDANCE

(On resuming at 1.45, Mr. W. B. Peck attended to take shorthand notes of the evidence and proceedings.)

Dr. JAMES ROBERT MILLAR ROBERTSON, previously sworn, was further examined as under—  
Examined by Mr. Bruce Smith—

23043. Q I understood that you say you have had thirty-seven or thirty-eight years' experience in connection with coal mining, and I take it that you appear before the Commission as an expert on the subject? A So, as a witness.

23044. Q You know you can be both? A I do not come as an expert at all.

23045. Q Have you ever heard of an expert witness—he is a compound individual? A That is an equivalent term.

23046. Q You know, an expert witness is allowed to give his opinion, as an ordinary witness can only give facts that come within his personal knowledge. You have given a good many expressions of opinion? A In answer to questions.

23047. Q You have said "I do not know," "I could not say," or "If I did know"? A If I could give an answer to a question, I have given it.



- 22948 Q You gave evidence of impetuosity, this morning, when you did not know of your own knowledge. For instance, you were not in the mine when the explosion took place? A No.
- 22949 Q You have given evidence as to the probable cause of the accident? A I suppose my witness might do that. It were not wise to expect to do that.
- 22950 Q I would you to recognize that you are an expert, and that you have come to expert opinions as the result of thirty years or thirty-eight years' experience in connection with coal-mining, a large part being as a working engineer? A Yes.
- 22951 Q Did I understand you to say this morning that it was really impossible to explain the thing—that we do not know the facts? A In connection with what?
- 22952 Q With the explosion? A I did not say explosion.
- 22953 Q Do you not "assent"—that it is really impossible to explain it—we do not know the facts? A In connection with what?
- 22954 Q In connection with the incident? A Well I said that it would be in answer to most particular questions.
- 22955 Q Do you profess to be able to explain the thing? A I can explain so much of it—  
[interrupted]
- 22956 Q I want to know whether you said it was really impossible to explain the thing, because we do not know the facts? A I cannot answer that, unless you answer me.
- 22957 Q I mean this disaster and its cause? A Well, in my opinion, it was a wind-blust.
- 22958 Q I am coming to that by-and-by—it will be half-an-hour before I get to that. Did you not say, "It is really impossible to explain the thing, we do not know the facts"? A In connection with what?
- 22959 Q This disaster? A In connection with this disaster, I did not.
- 22960 Q Then I am understood you, and that your words mean wrongly. [He assents.] Is that? A I think so. In my opinion I can give you the cause.
- 22961 Q Now, in your opinion, what was the primary cause of this disaster? A A wind-blust.
- 22962 Q Was there any other cause but a wind-blust, that led to all the damage that took place in the mine? A I think a wind-blust would account for the damage. There are some particular points in connection with the phenomena which are difficult to explain. When you come to them, I will tell you.
- 22963 Q You run account for almost the whole of it by a wind-blust? A Yes.
- 22964 Q You run account for some opinion you, after doing, did not play a part in it? A That is one of those matters that must be explained. Otherwise could not play a part in the after-effects.
- 22965 Q What part—that is the cause to include necessarily? A Yes.
- 22966 Q Did fire-damp play a part? A No, I have no evidence of that.
- 22967 Q What, in your opinion, would be the evidence of fire-damp playing a part? A You would see in some parts evidence of flame and force emanating from the canopy, where it had been ignited.
- 22968 Q Apart from that, I understand you to say that you would expect to find evidence of flame? A If it were so explained.
- 22969 Q If you saw evidence of flame yourself, and were satisfied that there had been flame in different parts, would that show your opinion as to the probability of fire-damp having been an element in the disaster? A I know what you are coming to—you may as well come to that now.
- 22970 Q I want it to appear correctly on the notes? A I say yes, with a qualification.
- 22971 Q What qualification? A It is impossible to shut one's eyes to the fact that certain materials was produced. That could only be produced in one way; by complete combustion of coal—we said that in the case.
- 22972 Mr. Waddy: I do not think Dr. Robertson has finished his sentence.
- 22973 Mr. Mease: I think you should allow Dr. Robertson to finish his qualification.
- 22974 Mr. Mease: [Q] You had finished? A Yes.
- 22975 Q That is not an answer to my question. If you were concerned yourself that there had been flame—different flames—in different parts of the mine, would that satisfy you that there had been gas? A No, not quite.
- 22976 Q When would you require to satisfy yourself that there had been gas involved in that disaster, as an element? A To account for a gas explosion for this accident, there must have been a large body of gas—to account for the damage done.
- 22977 Q I did not ask you that. I am passing over your statement, and admitting for the time being that a blast of wind was the temporary cause of the trouble. I ask you—was fire-damp an element in it, and you say: Yes, with a qualification? A I quite assent I have been in mines. I refer to certain materials.
- 22978 Q You said that it would cause the explosion of men. I am asking you whether fire-damp was an element in the disaster? A I see no evidence of it.
- 22979 Q What evidence would you require to satisfy you that there had been fire-damp? A I would require to know that an explosion had taken place—an explosion of gas.
- 22980 Q What would be the evidence of an explosion of gas? A The raising of dust, the clearing of timber and the flames all towards the mouth of the tunnel.
- 22981 Q I wish to know more from the facts? A I am trying to answer you.
- 22982 Q You told me of the causes which would lead to the evidence of flame. I want to know what phenomena there would be to indicate fire-damp in the disaster? A You cannot have that without the appearance of flame.
- 22983 Q Would you expect to see evidence of fire? A Yes, if a mine were burnt out you would see evidence of fire. If destroyed by a hurricane, evidence of wind-lays.
- 22984 Q What evidence? A You would see the timber burnt and the inflammable material consumed, probably.
- 22985 Q Probably—not necessarily? A Yes, necessarily. You would see the bristles burnt. You would see evidence on the props, the bark would be burnt, and you would see evidence on all the inflammable material.
- 22986 Q What would you expect to find on the men in the mine? A None lasting.



20088. Q If you were satisfied that a number of men in the mine had been severely burnt, and that there were other evidences of burning, although not of complete consumption of bodies, would you then believe that gas was an element in the disaster? A Yes; but I did not see any such evidences.

20089. Q I do not care what you saw? A I should like to tell what the facts were which I saw; there is an object to be gained by answering certain things.

20090. *Mr. Howe* [Q] If you will answer the questions as they are put to you, it will be better? A I am trying to do it.

20091. Q Mr. Bruce Smith is only putting a hypothetical case? A Is there any need for it, when there are so many evidences of fact?

20092. *Mr. Bruce Smith* [Q] I am coming to evidences which you have taken no notice of. I want to know, if you are satisfied that a number of men have been severely burnt, would you then come to a conclusion that gas was an element in the disaster? A I might, or I might not. It would depend on circumstances.

20093. Q Have you read the evidence given at the inquest by the doctor? A Not one word.

20094. Q I am glad of it, because it will put me on suspicion of pulling some tricks on you before you say you did not see any men burnt? A I was not in the mine at the time. Nobody ever takes burnt

20095. Q Do you claim a monopoly in the matter? A No one can get out who saw anyone burnt.

20096. Q Did you see anyone burnt? A I saw evidence of slight burning.

20097. Q On whom? A On several men.

20098. Q What evidences? A The evidences raised, it was entirely caused, it was entirely due to that.

20099. Q You do not claim that nobody else saw anything you did not see? A I do not know. I only claim to know what I saw myself.

20100. Q I suppose, in approaching a problem of this kind with a view to its solution, you are not supposed to hear the evidence of other men as to what they saw? A Certainly not.

20101. Q I suppose, if there are possible witnesses upon whom there can be no suspicion of partiality, you would treat their evidence as part of the data on which you would base your opinion? A I should attach more importance to the evidence of persons who had seen the effects of asphyxiant elements.

20102. Q You told Mr. Wade this morning, in connection with the Westchester explosion, that there was evidence of an explosion from gas;—there was evidence of timber, the burning of cloth, and men were badly burned? A Yes.

20103. Q There are evidences of burning by gas? A Yes.

20104. Q Supposing somebody else saw distinct evidences of severe burning on men's bodies, would not that affect your conclusions? A With the surroundings.

20105. Q What surroundings? A How can I likely to know where they were.

20106. Q You would look upon it as part of your data? A Yes.

20107. Q It would be important data in relation to the question of whether fire damp was present? A Of course the present—yes.

20108. Q Your reason is that you saw no evidences of flame? A Yes.

20109. Q You never read the evidence given at the inquest? A Not a word.

20110. Q I am glad to hear it, because I would not like to bother you with what you have read before I am going to read to you the evidences of the medical men, and see whether that will alter your mind.

20111. *Mr. Wade* [Q] It must be done thoroughly. The only way would be to read the whole of it. The answers given are subsequently qualified.

20112. *Mr. Howe* [Q] How did you know that Mr. Bruce Smith was not going to read the qualifications? A I know.

20113. *Mr. Bruce Smith* [Q] I have marked a number of passages in the cross examination by Mr. Wade. An element of value with regard to the evidence would be the man himself who saw this, and therefore I am going to give you the names. The first is Dr. Stark who, in cross examination by Mr. Loughton said—

The burner I saw on the bodies indicated to me that some flame of very high temperature had rapidly passed over the skin.

A I would say from some other cause.

20114. *Mr. Wade* [Q] Object.

20115. *Mr. Bruce Smith* [Q] If my friend is going to interrupt, I will not proceed. If he takes exception to anything which I state, he may quote other evidence.

20116. *Mr. Howe* [Q] Mr. Wade can mark down any place which he thinks Mr. Bruce Smith ought to read, and call attention to it afterwards.

20117. *Mr. Wade* [Q] I wanted Mr. Bruce Smith to read the next sentence.

20118. *Mr. Bruce Smith* [Q] The next sentence has nothing to do with it. It is—

The smoking of the eyes might also have been composed of sulphur.

That has nothing to do with it. What I was reading was—

The burner I saw on the bodies indicated to me that some flame of very high temperature had rapidly passed over the skin.

That is a clear cut proposition; and he continues—

I could not express my opinion as to whether the burner was caused by the action of coal dust alone.

~Interring under the nature of the witness the medical evidences as to the question of flame in the air. That is what he looks for, to say whether or not there was fire-damp present. I will read now—

The burner I saw were produced by some form of a very high temperature passing across the body rapidly.

A Is that given as the result of the flame?

20119. Q As the result left on the skin? A Does he say the true skin was destroyed?

20120. Q Further as he goes on to describe that? A Yes.

20121. Q Further as, is answer to Mr. Wade, the Doctor goes on to say—

The driving of mud down against the skin with great heat might produce a burning of the skin but not such a burning as I saw. I did not observe the coal dust of the burner's flame; I picked that the skin was charred, because I saw that the wood was charred. I did not think it was a coal dust of the burner's flame, but the burning of the skin and the burning of it and the presence of coal dust, that there has been burning when rapidly hot oil burns. I picked that the bodies I saw had been burned, because of the charred and detached skin. I got the medical men of clearing from the evidence as the skin

and







- 24035 Q Does it modify your opinion? A No.
- 24036 Q You told us of the Dunsthor explosion, you were not present? A Yes; I was present immediately afterwards.
- 24037 Q You said it was a gas explosion? A Yes.
- 24038 Q Where did you get your information from? A It was on the date when we did not think of explosions by accident, besides, it was a war the day before, and there was no dust in the mine—no dust at all.
- 24039 Q Did you see the bodies? A Yes.
- 24040 Q They were burnt? A Yes.
- 24041 Q That brought you to the conclusion that there was gas in the mine? A Yes, and I said that the scraps were charred and that the woodwork was charred.
- 24042 Q How many hours altogether were you in the Kewild Mine? A I suppose, in those three examinations on 4th August, 27th August, and 15th September I was in the mine eight or nine hours each day.
- 24043 Q Did you take notes? A Yes.
- 24044 Q Where are they? A Here they are. *(Witness handed Overland the notes he made in the course of his work. They were put in and numbered Exhibit No 10.)*
- 24045 Q Those notes are dated 15th August, 27th August, and 15th September? A Yes.
- 24046 Q You have them in your pocket? A Yes.
- 24047 Q You do not mind my looking at them? A No.
- 24048 Q This is the extract of the notes which you took on the occasion of your visits? A Yes, and I was in the mine at intervals of time.
- 24049 Q Everything reported is put down there? A All the salient features.
- 24050 Q Did you make any notes after about the bodies you saw? A No, that was when I was outside. I was examining on the surface, and I had no time to take any notes.
- 24051 Q Did you see the indication which I read in your having been shocked by the disaster? A Some of them.
- 24052 Q You did not see as many as they saw? A No; I was experiencing slight and dry.
- 24053 Q You do not pretend to have seen everything? A No.
- 24054 Q Is it not an important element, in coming to a conclusion, that you should have all the possible data that is at hand? A Yes.
- 24055 Q A little extra data will ———? A Indulge me.
- 24056 Q Will not one fact sometimes upset the whole of your conclusions? A Sometimes.
- 24057 Q You had not seen enough evidence of burning to lead you to the conclusion that there had been flame? A No, and sometimes flame, I have seen evidence in one or two limited areas of just puffs of flame.
- 24058 Q You think there was flame? A I think a little (unintentional) dust.
- 24059 Q Will you assert there was flame? A I do not know whether I am about it or not; I think there are evidences of the incandescence of the coal dust.
- 24060 Q That was not heat,—will you admit there was flame? A I saw no evidence of flame.
- 24061 Q You do not admit the conclusions of any one of these four doctors? A No.
- 24062 Q Do you admit their evidence? A I saw some of these men, Dr. Dalton and I saw four or five before. I said to him that the incandescence of dust is one of the features of an explosion. Every person goes his line, and all the exposed parts, notably increased with coal dust.
- 24063 Q He had the benefit of your opinion? A Yes. At the same time the effects of a coal-dust explosion are less exaggerated in some of the kind. Dr. Nott emphatically expressed the matter.
- 24064 Q Do you say that all the appearances on the mine can be accounted for a wind blast? A Yes.
- 24065 Q How do you reconcile the evidence of flame with wind? A No. I do not say there was flame.
- 24066 Q There was no flame? A No, I don't say.
- 24067 Q If you believe the doctors, you would say there was flame? A No, I have had more experience of these things than the doctors have had.
- 24068 Q If you had seen the witnesses yourself, would you believe there was flame? A Frank Purcell.
- 24069 Q If you saw the skin peeled off and sticking up, and the hair with hollow ends, would you believe in flame? A No; the hair will go in that way without any contact with flame.
- 24070 Q What effects on the body would you consider as evidence of flame? A The clothing and the skin charred.
- 24071 Q I read about that to you? A Yes, and you said burnt.
- 24072 Q What else? A The time also destroyed.
- 24073 Q Do you mean completely? A Completely say. That is evidence of flame, with surrounding circumstances as inflammable material and on the props.
- 24074 Q I am talking about the bodies? A That would be so. I have mentioned one or two things.
- 24075 Q You have mentioned the charring of the clothing and the burning of the skin? A Of the hair also.
- 24076 Q What would be the effect of the burning of the hair also? A It would be left in the form of carbon.
- 24077 Q The skin would be gone? A No, destroyed.
- 24078 Q Not carbon? A No. In the case where I so, there were only small bits of the epidermis leaved from the skin also.
- 24079 Q How many bodies did you see? A Perhaps a dozen.
- 24080 Q Can you examine all these evidences with a mind theory? A Yes.
- 24081 Q I will ask you about coal dust. What evidence would you require to satisfy you that there had been a coal-dust explosion as an element in the disaster? A There was positively no indication.
- 24082 Q I am asking you to abstract questions. What sort of evidence would you require? A I would expect to find, from the outset of the 4th Night, evidences of these increasing the road, and incandescence of dust on props.
- 24083 Q You would not believe there was a coal-dust explosion in the mine, unless you saw evidences of flame? A Evidences of coal-dust.
- 24084 Q And flame? A Yes, evidences of a gas and coal-dust explosion.



Witness—Dr. J. R. H. Lawrence, 2 March, 1904.

22083 Q If you are more satisfied that there was flame in the mine, would you think that the presence of gas and the operation of coal dust are feasible? A All the presumptions evidence is against it, and the facts show.

22084 Q I am putting a hypothetical case to you? A I would rather you did not. I want to hear you state the facts as they presented themselves to me.

22085 Q You could have to give your opinion? A I do not think hypothetical questions have any bearing on the case.

22086 Q I only dress you into cases, I do not think they have any bearing on the case at all.

22087 Q You do not mind my having an opinion? A Not at all.

22088 Q You have answered a great many hypothetical questions? A I am not aware that I have.

22089 Q I think you did? A I would be glad to change my opinion if you give me the evidence.

22090 Q If you set out to ascertain the things and you were satisfied that there had been flame in the mine, would that make the presence of gas and the action of coal dust, an explosion, perfectly feasible?

A I really do not know at what you are driving.

22091 Q If you were satisfied that there had been flame in that mine, would that make the presence of gas, and the action of coal dust feasible? A If I ever evidence of flame, I should be satisfied that there had been flame.

22092 Q If I saw coal dust deposited on the props, I should be satisfied that it came from coal dust.

22093 Q Supposing that you had never visited the mine, and were investigating the question, and supposing you were satisfied from the evidence that there had been flame in that mine, would you think the presence of gas and the operation of a coal dust explosion perfectly feasible? A If there had been flame, there would be evidence of flame; and if there was evidence of coal-dust, it would be evidence that coal-dust had been present.

22094 Q I see now, supposing you were satisfied, by investigating the question, that there had been flame, what conclusion would you draw as to the presence of gas and coal dust? A I should like to see the evidence.

22095 Q It is a purely intellectual question? A If there were evidence of flame it would be put down as such, and, if there were evidence of coal-dust, you would say that it was coal dust, probably accumulated in gas.

22096 Dr. [Witness] Q. Probably initiated by gas? A Yes.

22097 Mr. House Smith Q. My question suggests that you have not seen any evidence at all, and that you had never been in the mine, but that the evidence is brought before you by other people. If you were satisfied that there had been flame in that mine, what conclusion would you draw from it as to the presence of gas or coal dust? A I would draw no conclusion at all.

22098 Q What would you think that the flame had been caused by? A It would depend on the evidence.

22099 Q What would it be caused by? A Do you mean a general flame, filling the mine?

22100 Q A flame in any part of the mine? A There was flame in that mine, as far as evidence bearing the evidence.

22101 Q What could cause the flame? I appeal to your thirty-eight years' experience? A Do you mean a flame by gas?

22102 Q Supposing a flame had passed through the mine at the time of the disaster, what conclusion would you draw? A I should say that it was caused either by coal-dust or gas.

22103 Q Either by the one or by the other? A Yes.

22104 Q Would it not be probable that both were present? A There would be evidence of both.

22105 Q Whether there was one or the other would depend on further evidence? A Yes.

22106 Q I suppose you are satisfied now that there was gas in that mine? A No.

22107 Q You mentioned the Gallagher case? A No; I was not here. It was years ago.

22108 Q Do you know anything about it? A Nothing further than what I have heard.

22109 Q You heard that it was a burning by gas? By you except it? A I think I must accept it.

22110 Q Do you know that Hamilton reported that there was gas in the mine? A No, he never reported it to me.

22111 Q Do you know that Mr. Atkinson found some hundreds of feet of gas at the top of No. 1? A Yes. I told Mr. Osborne to tell him to go there to the face of No. 1, the highest part of the mine.

22112 Q It was the highest part of the mine? A Yes.

22113 Q How do you think it came there? A From the distillation of the coal-dust.

22114 Q That is your explanation? A That is one of the difficulties I run about the whole thing.

22115 Q With a knowledge of Gallagher's case and with the knowledge that Mr. Atkinson found gas, you still refuse to believe that the mine gave off gas? A I do.

22116 Q Supposing you were satisfied that there was gas coming from parts of the mine, would that affect your opinion as to the probability of gas or fire-damp being an element in the disaster? A If I have the mine gave off gas?

22117 Q If you believed it? A Yes.

22118 Q Supposing you were convinced from other people's evidence, as there probably might be—supposing you were convinced that gas were given off from the mine, would it affect your opinion? A If I believed it, it would.

22119 Q You would require evidence from other people? A I would hear their evidence, and satisfy myself.

22120 Q Supposing you went to the mine for evidence of gas and did not find any, would you believe the evidence of other people, or would you continue to think that there was no gas? A Yes, I would, knowing the history of the mine.

22121 Q What is your reason for saying that you do not believe that coal dust was an element in the disaster? A I do not say it was not.

22122 Q Do you think it was? A I think it was in some extent. The distillation of coal dust was an element in the disaster.

22123 Q Do you think it exploded? A No, I think it distilled.

22124 Q You do not think there was any coal-dust explosion? A No.

22125 Q Supposing you were satisfied that an explosion by coal-dust was feasible? A You would then see evidence of it in the mine.

22126 Q Everything would depend on your being satisfied that there was flame in the mine; it comes in that? A Does it?

22127 Q And you not tell me before that an explosion of coal dust was perfectly feasible? A Yes.



24129 Q Did you say that you were satisfied—[Interposed.] A I do not think this is a proper way to get at the bottom of the matter, by confining me in this way. This case has covered me so well and so amply, and I do not think it is the proper way to examine me. I think it is reducing the matter to Criminal Court procedure, and you are trying to twist words out of me that I do not say.

24130 Q You have no right to say that. You came into the Court to express opinions? A Did I say so?

24131 Q I say that you did. You have been expressing opinions all the morning, and I want to see by what process you have arrived at your decisions? [No answer.]

24132 Q Now take the Oaks and Bluestone theories. The explosion was from coal-dust? A And gas. I said that it was before the day that coal dust and gas exploded was thought of.

24133 Q You did not say those yourself? A I said afterwards.

24134 Q Where did you get your conclusions from that the explosion was from coal-dust? A It was the Oaks Mine that I saw. I could not get to Bluestone.

24135 Q How do you arrive at the conclusion that the explosion was from gas and coal-dust? A It was in this way. There was an attack made—[Interposed.]

24136 Q How do you know what the phenomena of it were? A I know five pits exploded at once—spontaneously.

24137 Q Were you there? A No.

24138 Q Did you read about it? A Yes, and saw it immediately afterwards.

24139 Q Do you accept the conclusions of the experts? A Yes.

24140 Q If you have never seen a mine at all, would you accept the conclusions of experts? A Yes, to some extent.

24141 Q Yet you refuse to accept the conclusions of four doctors? A They gave an opinion as to the cause of the accident.

24142 Q I am not talking about the cause of the accident? A You refer to the Oaks and Bluestone theories, and then you refer to the appearance of bodies as described by the doctors.

24143 Q You told Mr. Wade that you had had an experience of hills? A Yes.

24144 Q Where? A In the Cowden Hill Colliery.

24145 Q What were the effects there? A A horse was going on with ten or dozen sheep, and he was driven over the sheep, and the sheep were all piled up and crushed.

24146 Q That is all? A That is all, it was a loaded fall on a wet road.

24147 Q Was there evidence of burning? A No, it was not.

24148 Q What because of the drums? A He was severely injured.

24149 Q By the concussion? A Yes.

24150 Q No one was hurt? A No, there could be none.

24151 Q That is the greatest fall you have known? A It is the one that I have most knowledge of at present.

24152 Q You have read of the effects of large falls, but personally you have no knowledge of them? A Yes.

24153 Q You have told the Commission about the Universal Colliery? A Yes.

24154 Q Do you know anything of it? A Yes.

24155 Q The frame passed through some parts of it? A The report of the investigation showed that.

24156 Q You have no reason to doubt it? A The nature of those who investigated the matter are quite sufficient warrants for their accuracy.

24157 Q Do you think that the presence of naked lights in the Mount Krishna Mine, at the time of the disaster, throws any light on the possibility of a gas or coal-dust explosion? A None whatever.

24158 Q You would not consider it in investigating the circumstances? A In no investigation of the circumstances you would consider everything.

24159 Q It would have no effect on you. You know where the lights were. You know where Marrow was with the light? A Yes.

24160 Q You attach no importance to it? A None.

24161 Q Did you say that it depends upon whether you were a Commissioner or not? A No; I wish you would not make such assumptions.

24162 Q Now, Mr. Wade read you an article from the "Colliery Guardian." You had evidently read it? A Yes, I had read it.

24163 Q You keep yourself fairly well up in colliery literature, as much as your numerous business engagements will admit? This was an article—"Notes on the Talk of the Hill Explosion"—from a correspondent. It is not an article by the "Colliery Guardian" itself? A No, it is some contributor who gives his opinion.

24164 Q This was on 11st February. Do you know in the very next number— Is this a weekly publication? A No, weekly.

24165 Q Do you know that in the number of the journal for 7th March, the Manager of the mine replied? A I did not see it.

24166 Q Do you not think it is fair, when a correspondent gives his opinion of a mine, that the Manager should be heard in reply? A Yes.

24167 Q I take the responsibility of that, at the time the views of the correspondent were read, we had not a line of the paper.

24168 Q To show how little dependence you can place on these matters, I may say that I have never read such an utterly erroneous statement as one that was first published in an American scientific paper, and was afterwards copied by the Sydney Morning Herald. It was on a question of meteorology.

24169 Q Mr. Bruce Smith? Q No, object is to see that the whole of this correspondence is placed before the Commission. It was an article written by a correspondent, who had not the courage to put his name to the article, and the Manager answers that article by a letter in which he says:

If your correspondence theory is to be given credence, there are two to believe that a bill of coal will generate such a wave of compression and heat as to ignite coal dust or gas at that or some distant point; that it is not necessary for active flames to travel the passages to meet the explosion throughout the mine, but that compression alone is sufficient.



Witness—Dr. J. R. M. Robertson, 2 March, 1918.

and that they will operate through seven savings days from dusk, or wet fresh, and eventually a gas ignites gas and dust in under ordinary, and the engine is ignited. You corresponded in a half an hour to look into gas, and, with myself, I am sure that many of your models would like to see the same.

The corresponding answers that letter, and again himself " Your Correspondent "

24160 Mr. Robertson [ Did he give an answer? ]

24170 Mr. Bruce Smith [ I will read it ]

24171 Mr. Bruce [ Is it worth while to read it? ]

24172 Mr. Bruce Smith [ I will hand it to Mr. Robertson ]

24173 Q You told Mr. Wade that you considered that the Kamble Mine was neither dry nor dusty? A Yes

24174 Q What is your standard of dustiness which would become a danger? A It is difficult to define my standard. No I read far distance, when the damage has taken place, was a wet road.

24175 Q I want to know, apart from the amount of moisture what is the standard of dustiness that becomes a danger? A When the dust is hanging moderately thick on all parts of the sides and the roof, and the floor.

24176 Q You know, according to the latest legislation that a sufficient amount of dust would be a total of 1 or 2 in every foot of road? A I have heard that stated.

24177 Q Would you accept it? A It would depend very much on the activity of the dust—what activity it was subjected to.

24178 Q You know that at the Washburn experiments Kamble dust was found to be the second most explosive? [ Yes or no? ]

24179 Mr. Bruce [ The result was " Considerable on " It was found that the dust was not more easily exploded than other dust, but that, when it did explode, it went off more vigorously. ]

24180 Mr. Bruce Smith [ You were not giving the different degrees of explosibility? A Yes, but I do not think the tests were fair. The tests were not such as would be likely to occur in a mine, and the dust which was exploded did not come from the surface of the Kamble Mine. It came from the bottom of the road below. ]

24181 Q The Manager of the mine was duly warned, and asked to supply a fair sample of the road-dust? A He could not get it in the mine, so he went to the coal breaker and took a few shovels.

24182 Q Was that stated in the report? A I do not think it was. When Mr. Atkinson spoke to me about getting mine dust, I said, " I will try so, but I do not know where you will get it from. "

24183 Q You do not accept a standard of 4 ounces distance? A I can hardly do that. At the same time I am not in a position to say the danger of the dust.

24184 Q If you heard dust in the quantity you stated, would you consider that a standard of dangerous dustiness? A How could you?

24185 Q If you knew that there was that quantity present in a mine, would you consider it dangerous? A It would not be so dangerous in a coal mine as in a quarry one.

24186 Q If it were in a quarry mine? A I would remove the dust.

24187 Q If the mine were deep, you would consider the dust dangerous? A I would immediately take steps to search it with water.

24188 Q Now, you told Mr. Wade something about the water question— [ Interrupted ].

24189 Mr. Atkinson [ Q Did I understand the witness to say that the dust which was sent to Washburn to be experimented upon did not come from the Kamble Mine, but from the breaker? A Yes, it is from the coal dust, which is more dusty than the other. It is very fine dust, and more homogeneous, more so than any dust in the mine. ]

24190 Mr. Robertson [ Q Can you tell me where the dust came from? A It came from off a breaker beam. It is the dust which you see flying in the air and mixing with it, when the coal is falling, but which afterwards subsides and settles on the breaker beam. ]

24191 Mr. Bruce Smith [ Q Was it not a fair sample of Kamble dust? A I think you could not say so. ]

24192 Q Was it or was it not? A I hardly think so. It would be much finer on the breaker than in the mine.

24193 Q Do you doubt, if tests were made from dust taken from the mine, that the dust would be found to be equally explosive? A I think it would be less so, because it would be extremely coarse dust. The finer, Kamble was a very dusty mine. You could see no dust on the sides.

24194 Q You said that Kamble had no water to spray? A I said that last year there was none to spray.

24195 Q Do you know that fact? Will you read the report a page by him at the impact on page 13—

It was whether there is an abundant supply of water in the mine, or in the dry mine there are thousands of tons of water come out the mine to go out in a rock. There is no dust of water in the mine.

A That is what he supposed.

24196 Q Is not that true? A Yes, we were much interested as to whether we could hold out. I may tell you that no water regularly was.

24197 Q You have trouble with sprays on these? A There was no necessity to water before.

24198 Q Because you had trouble with holes in the bottom? A There was no necessity for watering, except in one case, and that only on the floor.

24199 Q With regard to that plan made by Mr. Washburn. Did you see it? A Yes.

24200 Q Are you sure it was approved by the manager? A I pointed that out to him, and he said it would make no difference.

24201 Q Is not that you who said it would make no difference? A No.

24202 Q How long did it take him to make it? A A pretty time.

24203 Q Did it prove to record all the objects which existed in the different ways? A From the mouth of the &

24204 Q Does it show anything like the window of objects which are shown upon Mr. Cushing's plan? A Mr. Cushing's plan is more complete in detail as far as it goes.

24205 Q It contains more dust? A Yes.

24206 Q You saw Mr. Washburn's plan, after he had finished it? A Yes, I saw it. It contains the subject foreman—that is all.

24207 Q You were satisfied from what you saw that there had been fire in the mine? I am content at one spot contained in fact.



24098. Q The only way you ascertain any flame in the man, in connection with that fire, was that the fire was originated by a different cause? A I thought so and I think so still.

24099. Q Do you know, in the same is regard to what Mr. Wade sent the letter—do you know that in the report with regard to that disaster, it was found that there was a gas fire in the same? That report states—

The existence of a gas fire was shown on the 15th July would I believe, serious for every long observed.

A That does not state that there was a gas fire. It was found afterwards there was none.

24100. Q Mr. W. N. Adams reported that as he felt? A It was afterwards found that there was none.

24101. Q Do you know that he reported the influence related that there was none? A There was no evidence of it.

24102. Q If there were, would that do away with the whole theory? A There was no the way.

24103. Q Mr. W. N. Adams concluded there was? A He was wrong.

24104. Q Now there any official report later proving that there was not a gas fire? A I am not aware.

24105. Q Is that the quotation from the official report? A Yes.

24106. Q Mr. Bruce Smith? Q The report states—

The existence of such a fire was not actually proved, my word, it have been made to be proved, but the following statement—The said report in the statement that the explosion was due to a gas fire in the building corner.

And then Mr. W. N. Adams gives the different reasons— [Inter-posed].

24107. Q Mr. Bruce Smith? That is in the report.

24108. Q Mr. Bruce Smith? Yes.

24109. Q Do you say that, subsequent to the issue of this report, my Blue Book or report has been issued dealing with the matter? A I do not know, but articles have been published in the different magazines, and the statement has been made that there was no fire.

24110. Q Will you tell me what is the relationship between yourself and Mr. Rogers, with regard to expenditures in connection with the Mount Kembla Mine? A Mr. Rogers and I generally have a consultation, and he suggests to me so. He is very cautious. As a rule, I might suggest a different way of meeting a thing, but really I never start any expenditure.

24111. Q Has he any authority to expend money without the order being first referred to you? A Oh, yes, I have perfect confidence in his judgment.

24112. Q That is, where the safety of the mine is concerned? A Yes; in fact, if I knew he was wrong, after he showed it to me, I should know that he was doing it for a good end, and I would not say a word to him.

24113. Q Is it not a fact that, before he spends any money, he makes it a practice to come to you?

A He very often says that he would like to send me, and he goes slowly to get it as soon as possible.

24114. Q You are an accountable expenditure paid on him as for expenditure of money for the safety of the mine? A I will take a supposition case. Say an attention of business—I would say, "You work not a moment, and let me see how it goes out."

24115. Q I mean as to ordinary expenditure? A There is no doubt at all.

24116. Q If he spent money without consulting you, he would have nothing to fear from you? A No—if it were not unless expenditure.

Cross-examined by Mr. Lysaght.—

24117. Q I see you are Consulting Engineer for the mine? A Yes.

24118. Q Have you any financial interest in the Kembla Mine? A Practically no one.

24119. Q You are under no statutory responsibility regarding the Mount Kembla Mine? A What do you mean by statutory liability?

24120. Q Mr. Wade? That is a question of law.

24121. Q Mr. Lysaght? I will not guess it.

24122. Q I think you are Managing Director? A No.

24123. Q If Mr. Rogers stated that you were? A It would be incorrect.

24124. Q If Mr. Rogers said you were the manager? A That is equivalent to being Consulting Engineer.

24125. Q Three notes, which you made on your inspection—I take it that they only show things which you yourself observed when you were inspecting on the day mentioned? A Yes.

24126. Q Three notes in my hand are dated 18th of September, 1901? A Yes.

24127. Q Everything that existed was observed on 18th of September? A Yes.

24128. Q What does this mean?

This read had no date before accident.

How would you observe that on the 15th of September? A I observed it before the accident.

24129. Q I asked you if the notes you made were notes of things made on the day of which the notes have the date? A That statement refers to a previous statement.

24130. Q Yes?

Work of making No. 2 Light preventing vigorously, already said, when about, along with water in place. The said had no date before accident.

A Yes.

24131. Q You had several copies made of these notes? A Two or three.

24132. Q You gave one to Mr. Ryland? A Yes.

24133. Q You gave one to Mr. Warrington? A I do not think so.

24134. Q He was sure that he did not get a copy of it? A I do not think he did.

24135. Q Did Mr. Rogers have a copy? A No.

24136. Q Who else? A I do not think anybody but Mr. Sillars—but probably Mr. Jones had a copy of it too.

24137. Q This memorandum contains not only notes of what you observed, but also the deductions you have drawn? A No, I don't.

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24138.



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24215. Q Is that the only one? Let me read you this:

The lines, however, going up the back leading to and through the considerable

That is the first of a series of notes

24216. Q It is an absolute impossibility that this was a counter. No dust, no gas, no shot—no appearance of fire? That refers to fact? A That is so

24217. Q Which part? A No 1—the travelling road

24218. Q Do you not know that in No 1 heading Mr. Atkinson found fire-damp within ordinary safety-lamp? A Yes. I sent Mr. McWhorter with him to that spot

24219. Q Where you speak "no gas"—is that the statement of "no gas" would be correct? A There was no gas on any day except the Sunday and Monday following the disaster

24220. Q Do you not know that Newman admitted he never inspected that place? A Other people might have done so—before night

24221. Q How do you know it? A I think Mr. Hay told you so

24222. Q Do you not know that in the report made by Mr. Nelson there is no such inspection mentioned? A Mr. Hay will tell you that he visited it a few days before the accident

24223. Q The note: "No appearance of fire." Was it not in that back heading that the candles were found that you speak about the evidence? A No

24224. Q Did you observe that candles had been burnt in the back heading? A No; I observed a small strip of candles was possible, but it was not burnt

24225. Q Other witnesses stated that it was burnt? A I have a little in my pocket—the substance is not destroyed, and here is another piece perfectly destroyed taken from a split 1½ miles off where so the was near

24226. Q Does this paragraph run up your observations—

From good logs compressed air against two increasing pressures and getting Q although was distilled looking at

What is "Q"? A Oxygen. That was put in by Mr. Nelson, I had no idea then whether the air, when compressed, would produce heat enough

24227. Q Do these motions run up the theory you place before the Commission as to how you account for the disaster—as resulting from yourself? A Hardly

24228. Q In what way do you want to modify it? First going logs compressed air against fire? A Apparently so. That is to say, in some way that I cannot explain, it occurred the upper, and was forced at that point. I cannot altogether hold to the opinion of the firm pointing logs, doubling compression, and increasing the force

24229. Q You do not hold to what you put down here, as the whole of your deductions? A No; I do not

24230. Q Then you have this:

From dust at each end or against beds probably so short, only heat sufficient to start dust as from dust combustion

Do you mean that the heat was so great without flame that it distilled the coal dust? A Yes, that is the suggestion

24231. Q In your opinion, was the heat generated sufficiently high to distil coal dust, and how? A By the great compression that the air was subjected to by the fall in No 4

24232. Q Do you know that, according to the evidence of Leitch, the fall in the 4th Right pillar would not be sufficient to force out the air to blow down the 6th pillar? A I am not aware Leitch could offer the information. He had left the mine two months before

24233. Q Did you know that? A I did not know that

24234. Q Do you know that Leitch would have, up to the time that he left the Colliery, a thorough knowledge of the pillars? A Yes

24235. Q You know that, ten days before the disaster, the pillars in the 4th Right had been estimated as far as practicable. You also know that before the large pillars were estimated, the roof had fallen down slightly? A I do not know that

24236. Q That is the evidence given by Leitch? A Leitch could not give an opinion; we was not there up to two months before

24237. Q Taking it as a fact that the pillars had been estimated as far as practicable, and the timber withdrawn for the roof to fall, does your theory assume that there was one big fall? A Yes, all the evidence goes to prove that

24238. Q It is assumed for the measurements of your theory? A I do not think you can put it as a theory. You can put it as a suggestion

24239. Q Your suggestion depends on one big fall over a large area? A I think it does

24240. Q Do you not know that, a week before the disaster the very roof of those 4th Right pillars had taken a first fall of 2 feet 6 inches? A I do not think that unless you difference

24241. Q Would not that move the pressure from the second fall? A I do not think it would

24242. Q Have you made any calculations as to what height the fall would require to be from to force out the air? A I do not think you could require anything to fall any considerable height; it all is force out air

24243. Q Have you made any calculations? A Yes, a test calculation, that the velocity would be over 200 miles an hour

24244. Q From what facts did you get it? A We had to assume. We had no data. There was something wanting that we could not supply

24245. Q Your suggestion is based on data which you imagined? A To some extent

24246. Q Your suggestion is based on data which you were forced to imagine? A No; it was based on the best possible data available

24247. Q What data? A Mainman suggested 7 whole spaces. Mainman suggested a little more. He had been away a few days, he could not tell me how much more

24248. Q Do you know that, at the time Leitch left, there was only about a 16-foot pillar on each side of the 4th Right to be examined? A I think Mr. Leitch must be wrong. We were working for two months continuously after that



- 24382 Q Do you know that the birds surrounding the pillars had fallen before Letch left? A I knew that the roof, as well as the pillars, had been falling for the previous three years.
- 24383 Q And had, up to that time, settled solidly? A Up to the time of the disaster they fell pretty solidly.
- 24384 Q Weight would be removed from the roof that had not fallen, by reason of the fall all round? A Yes.
- 24385 Q If there were only six rows represented by a 16 yard pillar on each side? A You represent eight rows one pillar on the north you have in your hand.
- 24386 Q Between the 16 yard pillar and the pillars pillar against the gird, you know that the pillars have not had fallen and settled down solidly? A I do not think so.
- 24387 Q Letch said so? A I do not think so.
- 24388 Q There would be an area at the west of 30 or 40 yards square in fact? A Yes.
- 24389 Q And, the first fall having come down a week before the disaster, is it not possible that the roof would continue to fall in small pieces? A The evidence is that it came down all at once.
- 24390 Q Do you not know that an inspection revealed the fact that the stores were close—in fact they fell afterwards? A Some of the stores had certainly fallen between the time of my first and second visit, but I do not think that that indicated anything. I do not see how in fact of that large extent the stores can be rested with dust, because the fall was a great deal of the whole of the dust with the air.
- 24391 Q Assume that there was a fall at would cover the air up the 15th light towards the heading at eight angles on each side? A It had nowhere to go in that direction.
- 24392 Q Would not a fall of the roof of the 16 yard pillar force the air at eight angles to the 15th light? A No doubt a portion of the air would be driven into the main part of the previous fall, but that would be a small amount.
- 24393 Q There would be a possibility of some of the air going by the escape afforded by the back heading? A Yes.
- 24394 Q That would considerably reduce the pressure of the air? A Yes, if it got to the back heading, but the most part of No. 4 was at the mouth of No. 4 with the back heading.
- 24395 Q What I want you to tell me is of the pressure of the air generated back, how do you account for men being burnt at the tunnel mouth? A Men were burnt at the tunnel mouth, as far as I can see, by them coming from the broken steam pipes.
- 24396 Q You have positive evidence that they were burnt by them? A How do you account for the force going over a side of road and having no time whatever of flame?
- 24397 Q I am not here to account for anything. How do you account for men being burnt on Peter's Flat?
- 24398 Mr. Wade: There is no evidence of men being burnt at Peter's Flat.
- 24399 Mr. Wade: There were some signs of heat there.
- 24400 Mr. Wade: There is no evidence of burning.
- 24401 Mr. Wade: Peter's Flat is the place to which the fugitive men ran.
- 24402 Mr. Lyngby: If the doctor's evidence is correct, you cannot account for the burning? A Any burning which I saw could be caused by hot air.
- 24403 Q If the doctor's evidence is correct you cannot account for the burning? A Probably Dr. Nash supposed the likelihood condition of the air to be connected with, or evidence of, burning.
- 24404 Q There are four distances of their evidence is correct, you cannot reconcile it with your suggestion? A It is just possible, of course I tell you frankly. I was asked to read Mr. Deane's report of an explosion. I was referred, because I could see in that a similar state of matters, as regards the circumstances of the dust in Kumbia, but the entire absence of flame or colored dust in Kumbia is one of the outstanding features you cannot ignore.
- 24405 Q One of the witnesses says that he saw flame rising towards him — [interrupted].
- 24406 Mr. Wade: And answer it easily.
- 24407 Mr. Lyngby: I want to ask you of your knowledge of gas in the Kumbia Mine,—you have admitted a knowledge of the burning of Oshagong? A A knowledge which I have not got.
- 24408 Q You gave evidence on that before a Parliamentary Select Committee? A I do not know of it, Mr. Robertson did.
- 24409 Q At a meeting of the Select Committee on the 4th of April, 1924, concerning the workings of collieries, you were asked by Mr. Nicholson, a member of the Committee—  
Q Do you remember a man getting burnt at Mount Kumbia? A Yes. That was when they were driving through some old workings.  
Q The way how he got burnt there? A Yes, we knew that there would be no water, and gas issued from the bore hole.
- 24410 Q Do you not know that Mr. Nicholson gave evidence before the Commission on the Coal Mines Bill, and in answer to Mr. Curley, admitted that the Kumbia mine was off gas in small quantities in all places? A He may mean by the Kumbia mine that it was gas on off at the same time in other collieries.
- 24411 Mr. Robertson: But he says "in all places"? I do not think he said.
- 24412 Mr. Lyngby: I have a quotation here as the matter.
- 24413 Mr. Wade: In various forms.
- 24414 Mr. Lyngby: On page 57 of the report of the inquiry the words are—"In all sections in Kumbia, Main level was given off freely." But Mr. Nicholson, before the Committee, said—"In all places." I will bring you the quotation.
- 24415 Mr. Wade: In all sections merely.
- 24416 Mr. Lyngby: I will bring you the book where it is given as "in all places." He was asked if it was in all places, and he said "in all places."
- 24417 Q Do you know that? A No.
- 24418 Q Do you know that David Evans admitted that he had reported Breckinridge to Mr. Rogers? A No, I do not know that.
- 24419 Q At page 31 of the evidence given at the inquiry he says—  
When I found gas some years ago, I reported it to Mr. Rogers, who was then underground manager. I also reported it to the haul, at that time we kept at Mount Kumbia a special report book for gas.



